

1883
Feb 17th 1827
at 50th & Mr Delany's

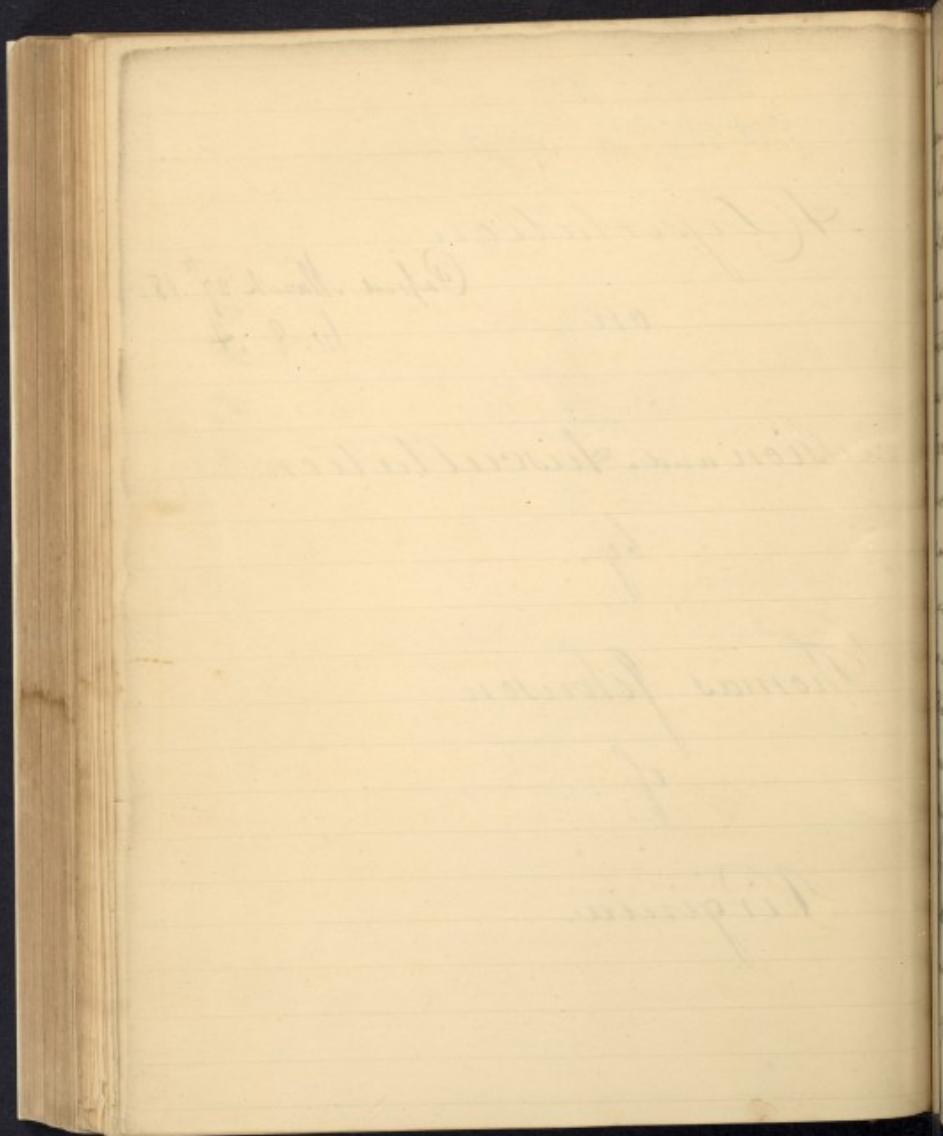
A Dissertation
on
Papers March 27th 1827
W. S. A.

Percussion and Auscultation

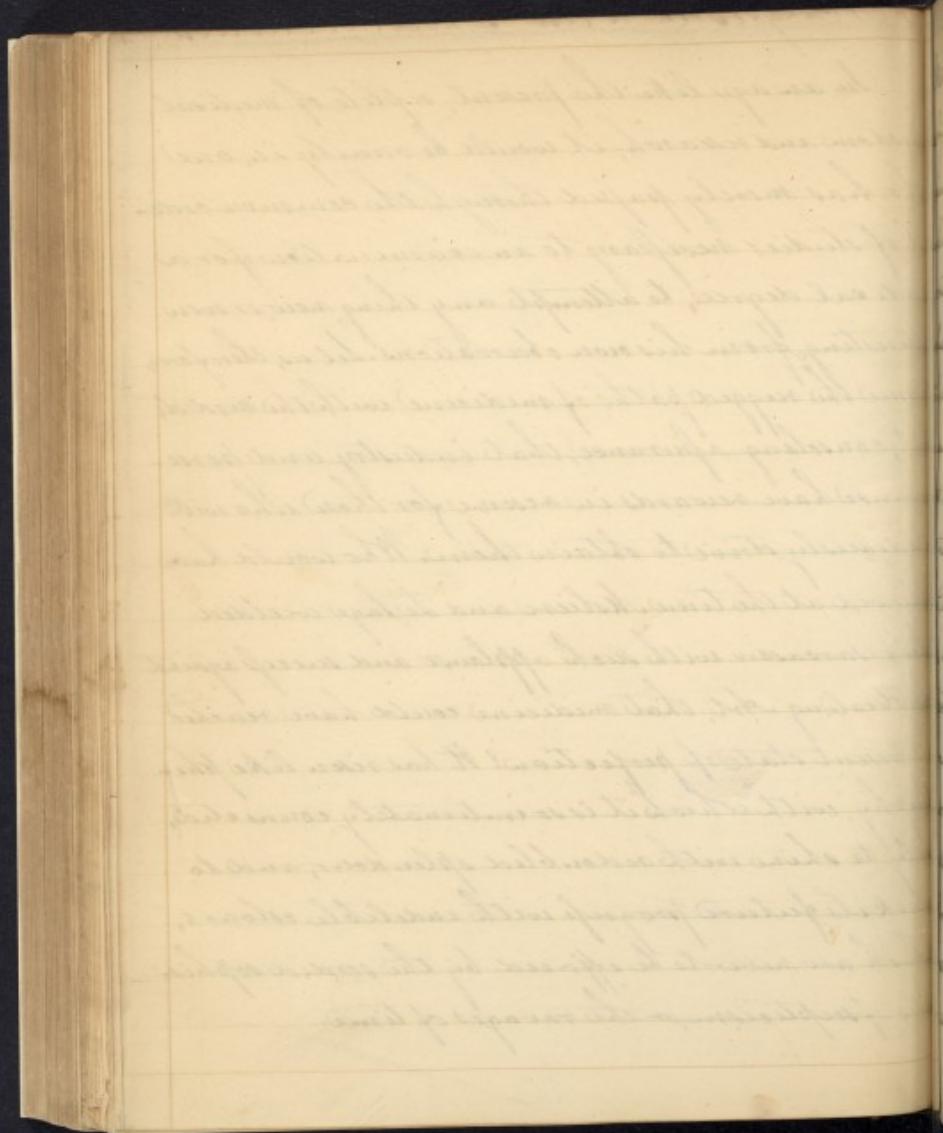
by,

Thomas Johnson
of

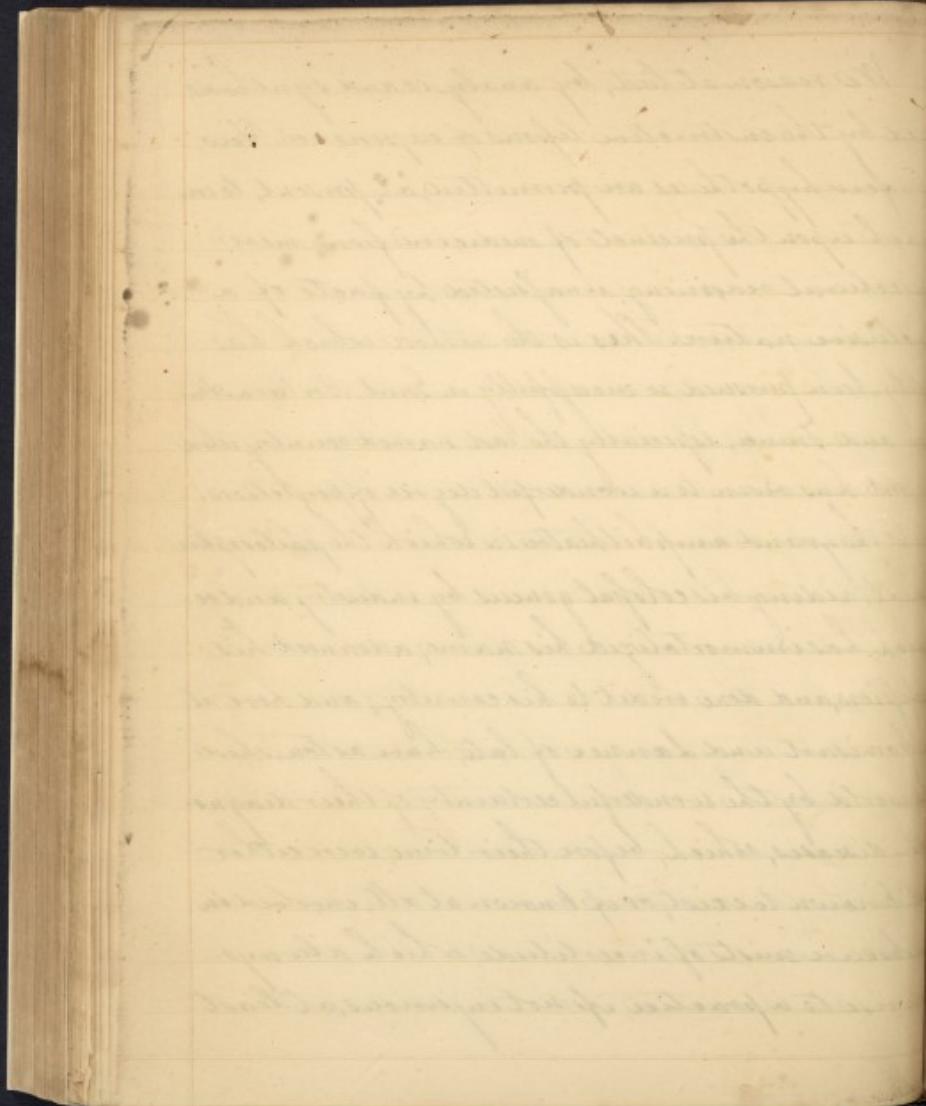
Virginia.



In an age like the present, replete of medical wisdom and research, it would be vanity in one who has merely passed through the common ordinary of studies necessary to an examination for a medical degree, to attempt any thing new, or even interesting, from his own observations. Let us, therefore, pursue the rugged paths of medicine with the modest, but, consoling assurance, that industry and perseverance have rewards in reserve for those who will assiduously strive to obtain them. Who would have believed at the time, Molier and Le Sage wielded their sarcasm with such applause and success against the Healing Art, that medicine could have reached its present state of perfection? It has risen like philosophy, with which it is so intimately connected, only to shine with redoubled splendour, and to mark its future progress with indelible colours, which are never to be effaced by the sorrid sophistries of scepticism, or the ravages of time.

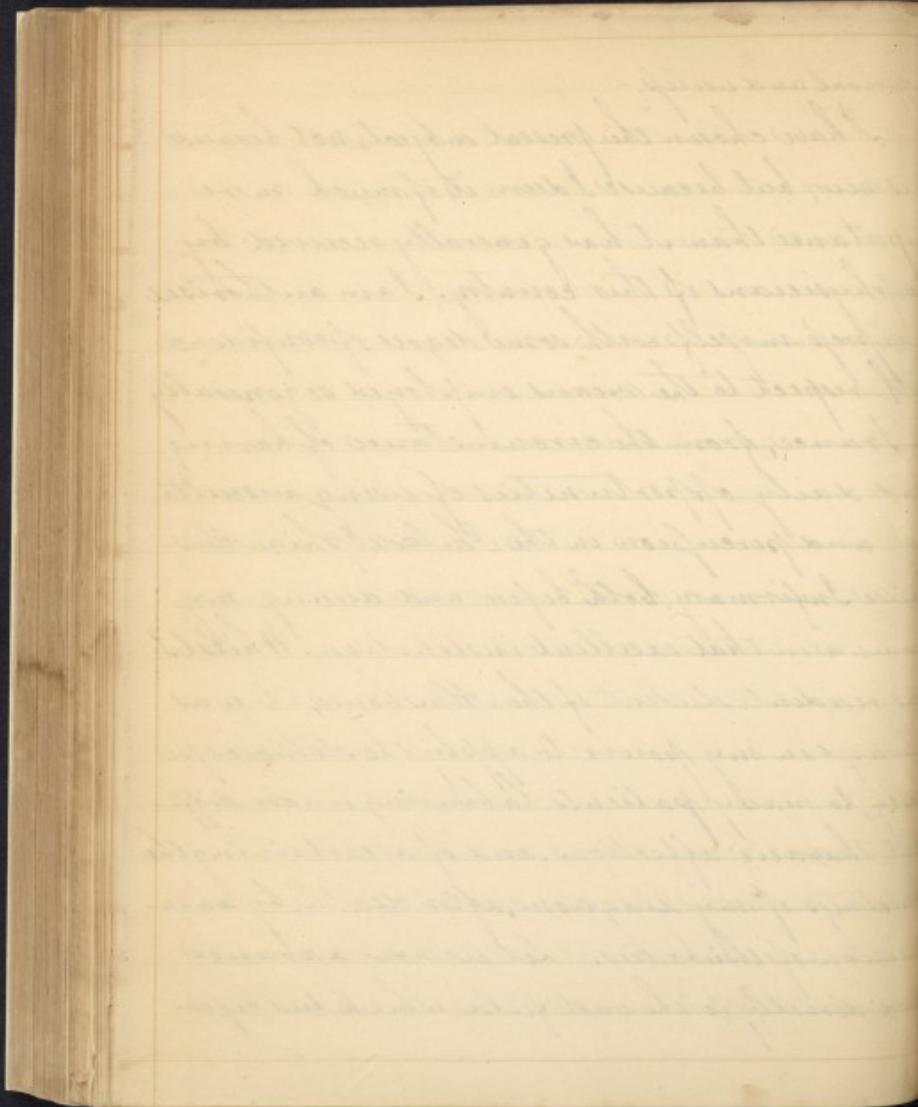


We reason at last, by analysis and synthesis,
aided by the instructive lessons of experience. Few,
very few hypotheses are permitted, at present, to enter
within the precincts of medicine from mere
conjectural reasoning, unsupported by facts of a
conclusive nature. This is the method which has
lately been pursued so successfully in Great Britain, An-
garia and France; especially the last named country, where
our Art has risen to a wonderful degree of perfection.
This is the grand amphitheatre in which the philosophic
Bichat, aiding his colossal genius by industry and re-
search, has immortalized his name, advanced his
profession, and done credit to his country; and here al-
so, Comisart and Larreee of late, have astonished
the world by the wonderful certainty of their diagno-
ses in diseases, which, before their time, were either
not known to exist, or if known at all, involved in
the obscure mists of incertitude, which always
gave rise to a practice, if not injurious, at least



empirical and useless.

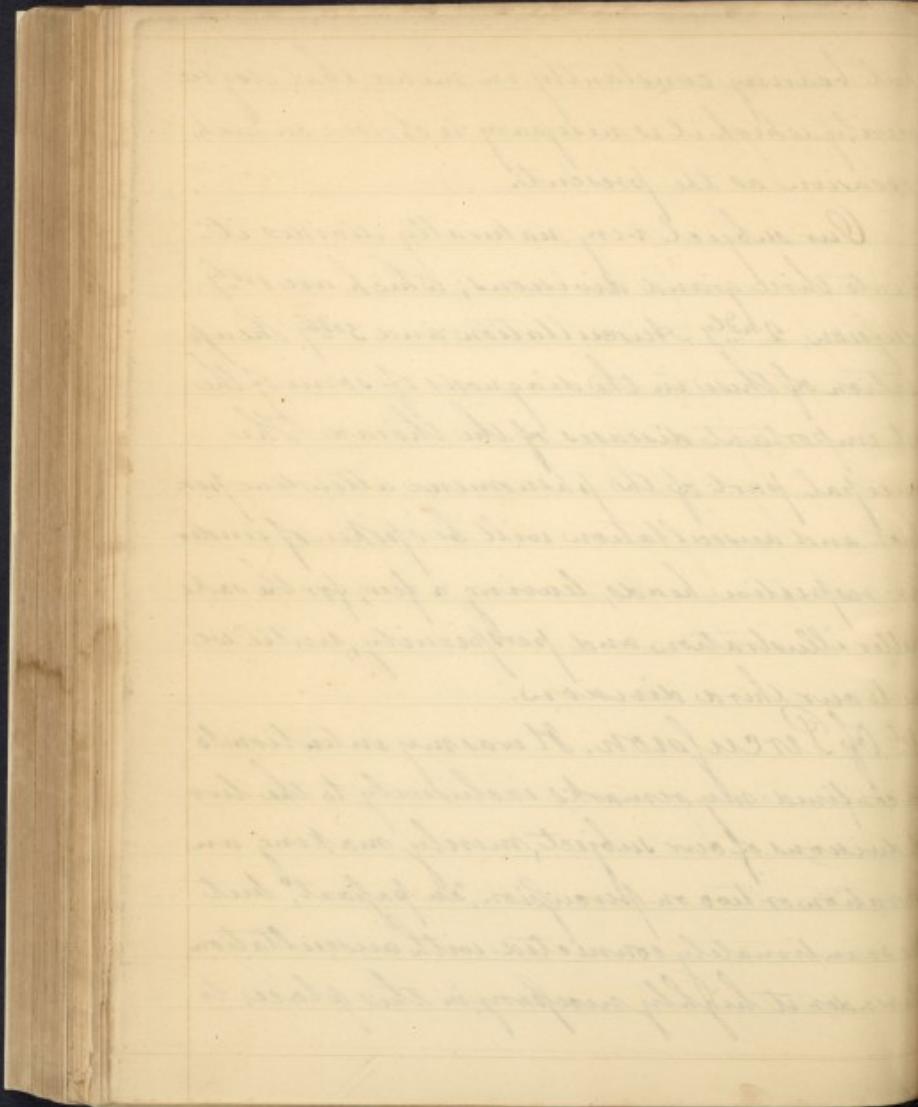
I have chosen the present subject, not because it is new, but because I deem it of much more importance than it has generally received by the physicians of this country. I am authorised to express myself with some degree of confidence with respect to the means employed so generally in France, from the circumstances of having had daily opportunities of using auscultation and percussion in the Philadelphia Almshouse Infirmary, both before and during my residence in that excellent institution. Whilst I was resident student of the Almshouse, it was always in my power to apply the stethoscope daily, to many patients labouring under different thoracic affections, and of ascertaining the correctness of my diagnosis, after death, by an inspection of their bodies. Let us now advance more directly to the vast field which lies before



us, but bearing constantly in mind, that degree
of brevity which it is necessary to observe on such
an occasion as the present.

Our subject very naturally divides it-
self into three grand divisions; which are 1^{stly},
Percussion, 2^{ndly} Auscultation, and 3^{rdly} The ap-
plication of these in the diagnosis of some of the
most important diseases of the thorax. The
principal part of the phenomena attending per-
cussion and auscultation will be spoken of under
their respective heads, leaving a few, for the sake
of better illustrations and perspicuity, until we
come to our third division.

1st Of Percussion. It was my intention to
have confined my remarks exclusively to the two
last divisions of our subject, merely making an
observation or two on percussion, in passing, but
it is so intimately connected with auscultation,
as to render it highly necessary, in this place, to



give a brief sketch of it, separately. This method of examining thoracic diseases was first practised by Auenbrugger, a German physician, of considerable reputation. Percussion, according to Dr Clarke, is as commonly resorted to in Paris, in the diseases of the chest, as the pulse is in England, in fevers. The method of Auenbrugger consists in striking the chest with the ends of all the fingers brought to a point, taking care that all the fingers strike the chest synchronously and in a perpendicular manner. The sound emitted, when the thorax is in a perfectly healthy condition, has been compared to striking an empty barrel with a mallet; but surely this is a very great exaggeration, for to my ear, it has hardly the faintest resemblance to it, the sound of percussion

*Nouvelle methode pour reconnoître les malades internes, par Corvisart.

De percussione thoracis. Auenbrugger.

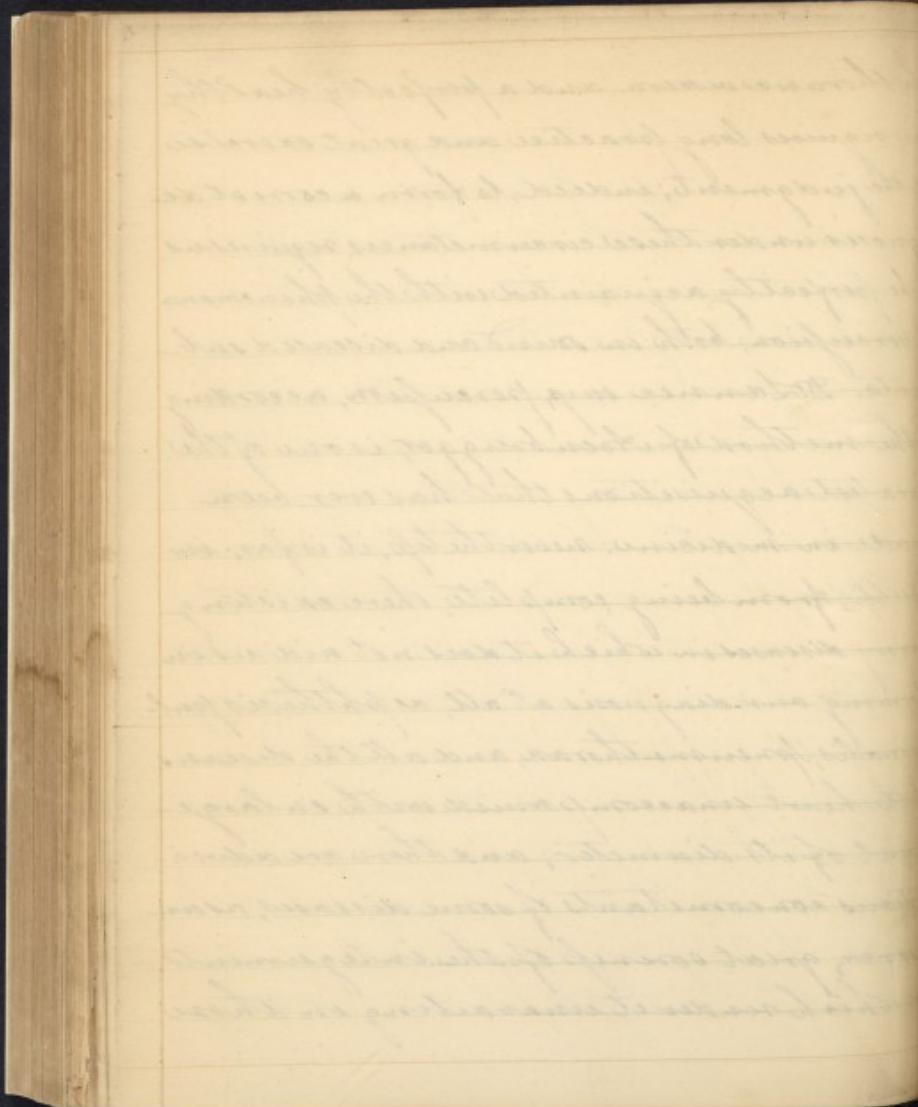
Prayed and written
in good and sound condition

being a peculiarly indescribable one, which may easily be learned by those who will strike a sound chest a few times in the manner above described. If the chest be partially or entirely filled with a fluid, as serum or pus, or by a solid body, as a tumor, upon applying percussion, we perceive a dull, or matt sound, very much resembling that which is produced by striking the thigh, palm of the hand, or any other solid part of the body with the ends of the fingers collected together. The sound, as commonly sent forth, is either obscure, or clear, in proportion to the extent of the existing effusion. The sound is also commonly obscure over the diseased part only, all the rest giving a clear resonance. In order to become well acquainted with the slight shades of difference which sometimes exists between a slightly diseased state of

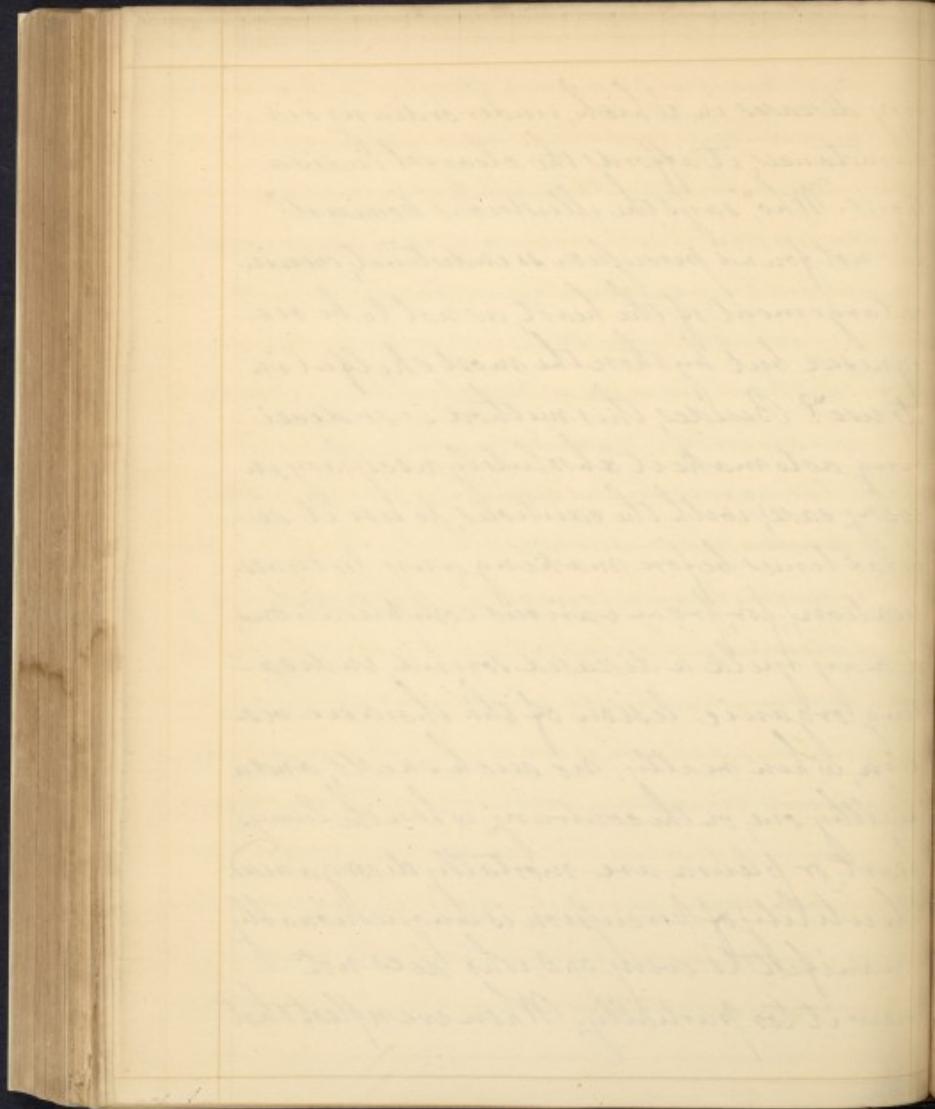
and the same time it is
a very small one and it
is situated in the middle of a
large number of small rivers and
streams which are probably
the outlet of the great
lakes and the rivers in
the country. The water is
very clear and the fish
are numerous and very
large. There are many
small streams which enter
the lake and these are
all very rapid and
have a great deal of
current. The water is
very cold and the fish
are very small. The
water is very clear and
the fish are very large.
The water is very cold
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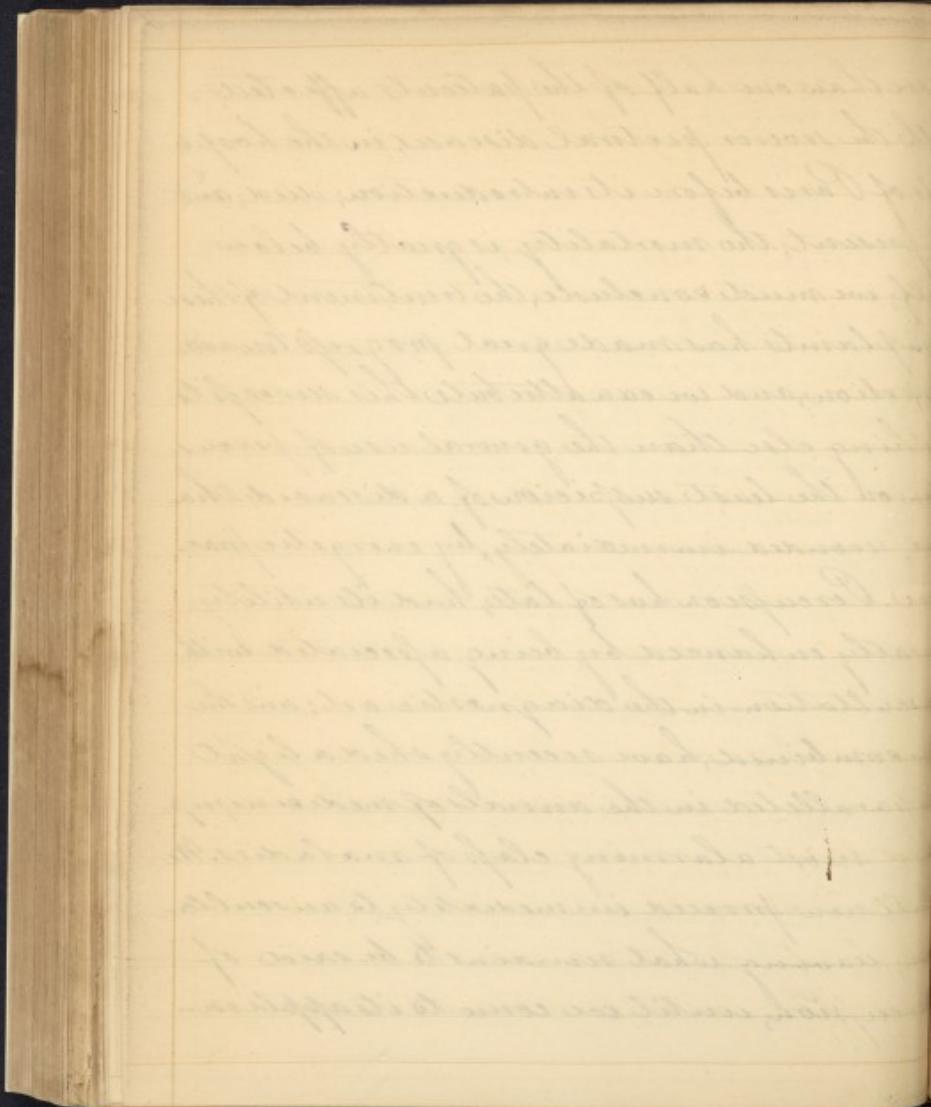
the thoracic viscera, and a perfectly healthy one, requires long practice and great exercise of the judgment; indeed, to form a correct diagnosis under these circumstances, requires us to be perfectly acquainted with the phenomena of percussion, both in sound and diseased subjects. Dr. Lannee says, percussion, according to the method of Aenbrugge, is one of the greatest acquisitions that has ever been made in medicine: nevertheless, it is far, in itself, from being complete, there existing many diseases in which it does not aid us in forming our diagnosis at all, as phthisis pulmonalis, pneumo-thorax, and all the diseases of the heart unaccompanied with enlargement of its diameter; and there are adventitious concomitants of some diseases, as a severe, great soreness of the integuments &c. which render it unavailing in those



very disease, in which, under ordinary circumstances, it affords the clearest indications. Who," says the illustrious Bonisart" has not found percussion so indistinct, even in enlargement of the heart, as not to be recognised but by those the most skilful in its use? Besides, this method is so deceiving as to make it absolutely necessary, in every case, with the cautious, to use it several times before making any pronostication; for, from various complications, it may yield a diseased sound, indicating organic lesion of the thoracic viscera, when really, no such exists, and a healthy one, on the contrary, when the lungs, heart, or pleura, are mortally disorganized. The utility of percussion is unquestionably manifest to every one who does not view it too partially. When we reflect that



more than one half of the patients affected
with the severer pectoral diseases, in the hospi-
tals of Paris before its introduction, died; and
at present, the mortality is greatly below
half; we must conclude, the treatment of these
complaints has made great progress towards
perfection, and we can attribute this success to
nothing else than the general use of percus-
sion on the least suspicion of a disease in the
thorax, seconded immediately, by energetic prac-
tice. Percussion has of late, had its utility
greatly enhanced by being associated with
auscultation in the diagnostic art; and the
two combined, have recently shed a light
unparalleled in the annals of medicine, upon
a most alarming class of maladies. We
shall now proceed immediately to auscultation,
leaving what remains to be said of
percussion, until we come to its applica-



tion in conjunction with this very interesting and novel subject, to thoracic diseases.

2nd Of Auscultation. Auscultation is either immediate or mediate. Immediate auscultation consists in applying the ear to the breast, or any other part of the thorax, opposite the part we suspect to be diseased, or in which, we wish to ascertain any phenomenon of the internal structure. This plan has been long in use by some physicians in organic lesions of the heart, though I do not recollect that M. Corvisart, in his work, has made any mention of it. By this means, the diagnosis of certain obscure affections were more manifest, than merely by percussion, and the other guides, independent of its assistance; yet, all were uncertain and incomplete until M. Laennec, in the year 1816, applied mediate auscultation.

Mediate auscultation means nothing more than listening through some medium, instead of applying the ear directly to the thorax, which is often rendered inadmissible on account of the sex of the patient, or some other cause; when admissible, it affords no sufficient phenomena, by which, we can form a correct opinion as to the nature, or progress of the complaint. The first patient, on whom Dr. Lænnec tried immediate auscultation, was a young lady labouring under a diseased heart. It being a little disagreeable, in this case, to apply the ear, Mr. Lænnec thought of a well known law of acoustics; namely, if one end of a piece of timber is scratched with a pin, by fixing the ear to the other, we hear the impression of sound, greatly augmented. Immediately the experi-

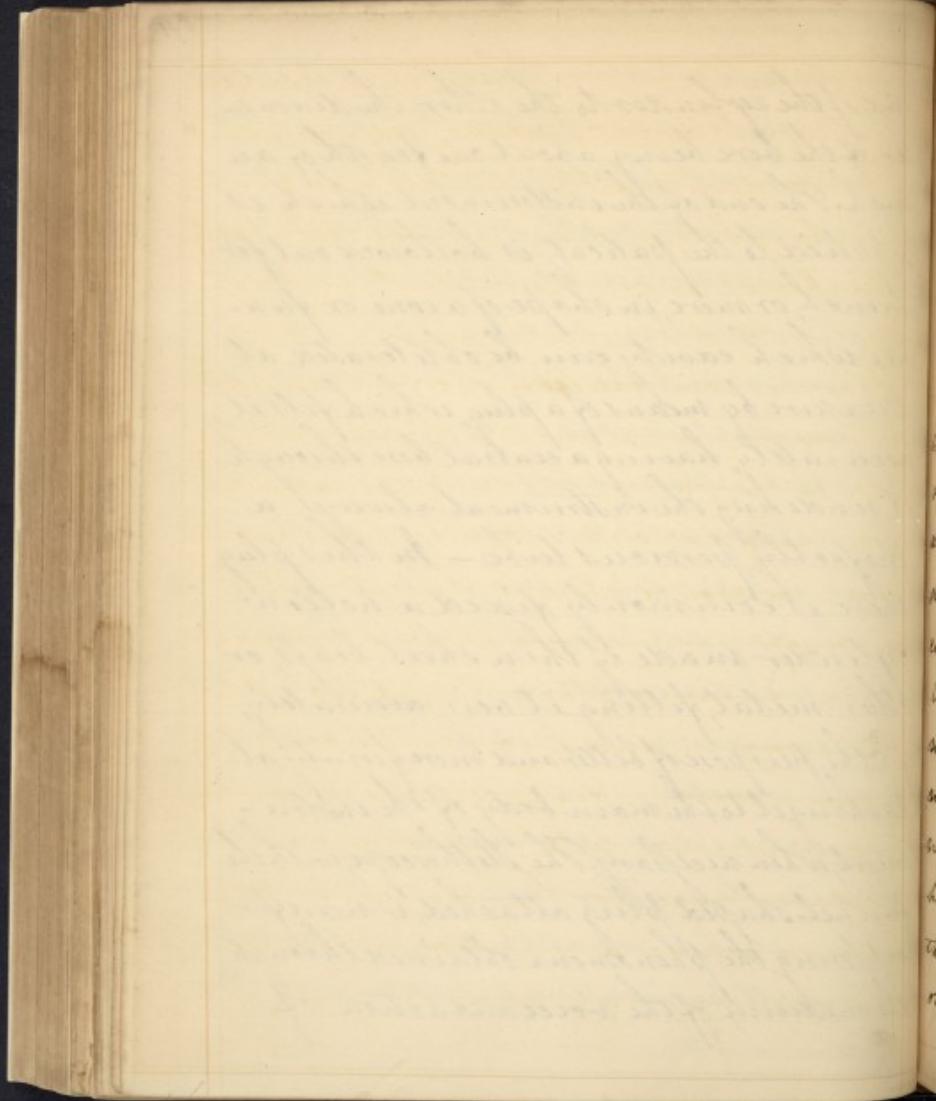
ment was made to see if this law of accou-
ties was invariable - A quire of paper
was rolled up in a cylindrical form, and
Lourree applied one end to the cardiac
region of the patient and the other to his
ear - He was very much pleased to find
he could perceive the action of the heart
much more distinctly than he had ever
been able to do before. From this time, com-
menced the experiments, which have, to
use the words of the author, "enabled us to
discover a set of new signs of the diseases
of the chest, for the most part certain, sim-
ple and prominent, and calculated, per-
haps, to render the diagnosis of the dis-
eases of the lungs, heart and pleura as de-
cided and circumstantial, as the in-
dications furnished to the surgeon by
the introduction of the finger or sound

in complaints wherein these are used." After variously contrived and multiplied instruments were tried to ascertain which conveyed the sound most distinct and augmented; the result was, that bodies of a moderate density, as a cylinder of light wood, answered the purpose much better than steel, brass, or any other very dense body. These experiments were so various, and the results so constant, as incontestably to give the wooden cylinder the preference.

It may not be improper in this place to give a brief description of the cylinder, or as Lanneau has named it, the Stethoscope, used by those who practise mediate auscultation. It consists of a hollow cylinder of light wood, from twelve to sixteen inches in length, and from an inch to an inch and a half in diameter. A perforation extends from one

... niente. Non ho visto nulla diverso
che non sia stato nei ventose pomeriggi
di primavera di questi anni.
Sembra dunque che la dinastia
di pomeriggi autunnali possa essere
stata sostituita da quella primaverile.
Di nuovo si trova allora soltanto
una sola specie di fiori, e cioè
l'Anemone nemorosa, il quale
sembra essere stato sostituito
dalla primula. La primula
è stata già assai comune
e non ha quasi dato più il posto
a nessun'altra specie.

end of the cylinder to the other, the diameter of the bore being about one fourth of an inch. The end of the instrument which is applied to the patient is hollowed out for a inch or more, in shape of a cone or funnel, which cavity can be obliterated at pleasure by means of a plug, which fits it accurately, having a central hole through it, rendering the instrument always a perfectly porous tube - In this plug there is commonly fixed a hollow cylinder made of thin sheet brass, or other metal, fitting it very accurately, for the purpose of better and more firmly attaching it to the main body of the instrument, when necessary. The Stethoscope, with the funnel-shaped plug attached, is used for exploring the phenomena obtained through the medium of the voice and action of



the heart; without the plug, it is used in exploring the phenomena of respiration. It may be divided into two parts, which can be skewed together at the will of the operator—this makes it a very convenient instrument to be carried in the pocket.

There is some caution necessary in using the stethoscope, if we wish to obtain exact results. If the patient be much emaciated, as is generally the case when we use this instrument, we should always place a little cotton or soft wool between the end of the cylinder and thorax, otherwise, it would not fit correctly, and of course, we could not form a certain diagnosis. We should not apply it upon silk, paper, or any other hard substance, for the friction upon this would convey a vibration, which might obscure entirely, or at least, complicate

the sound emitted from the diseased organ, in such a manner as to render the diagnosis imperfect. The instrument should never be applied over thick clothing—There should be no noise in the vicinity of the patient, especially, now whispering in the room, for these obscure the sound conveyed through the tube in a greater or less degree, according to their intensity. In exploring the phenomena of the diseases of the chest, the patient should be seated, if possible, upon a stool, and always lean from us, except in exploring the upper part of the shoulder, when he must incline towards us. If the axilla is the part examined, his hands should be held over his head; if the back be the part subjected to the operation, the patient must bend

forward, at the same time, crossing his
arms before. It is always advisable he
should turn his face away from us
whilst examining him. The end of the
instrument which contains the stopper,^{is}
which is applied to the patient, should be
slightly excavated to insure its greater sta-
bility. We should not hold the stethoscope,
as most persons are inclined to do at first,
by its middle, or upper extremity.—On the
contrary, we must hold it in the manner of a
pen, with the hand at the lower end of it,
and resting firmly upon the body of the pa-
tient. This method ensures a firm ap-
plication of the instrument. Everything
being thus adjusted, we next present
our ear to the end of the tube near us, taking
care to adapt our ear to the stethoscope and
not the tube to the ear, for if we move it,

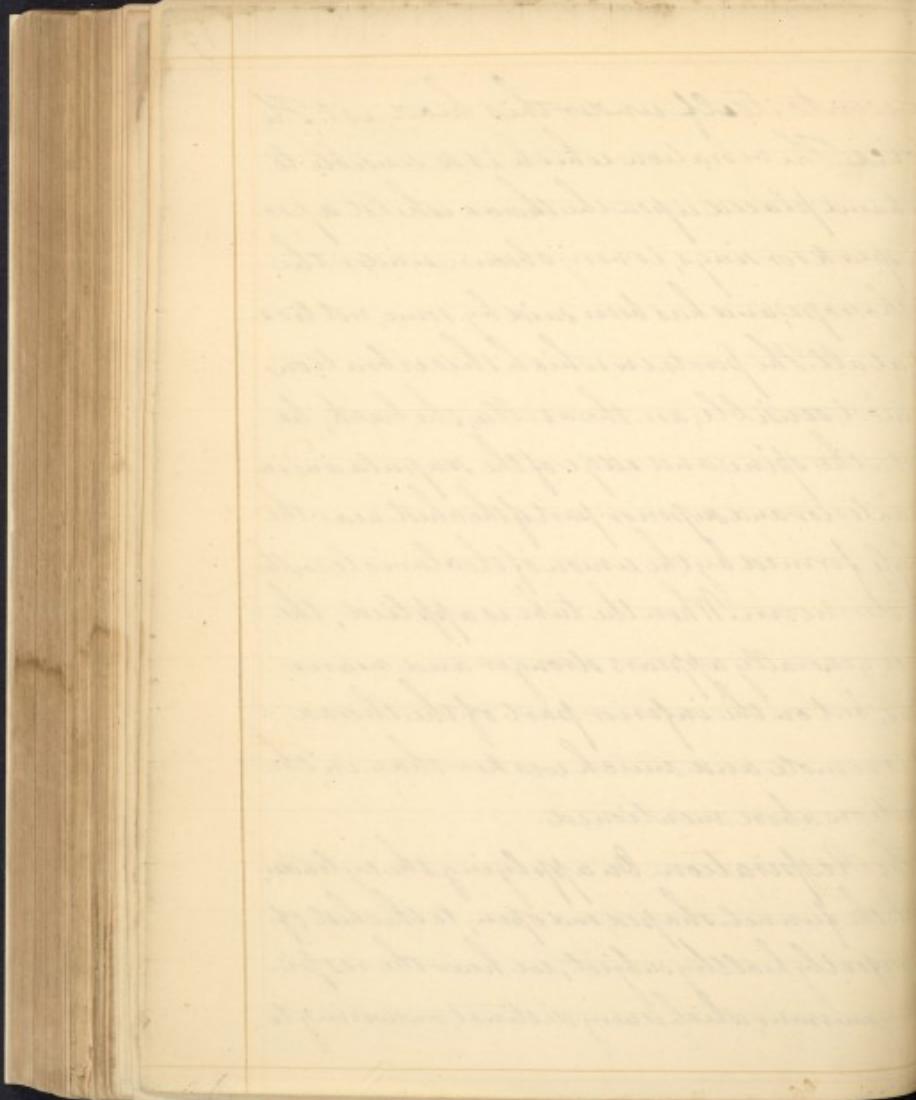
external sounds may enter and convey
w^e false impressions. Most of the indications
afforded by the stethoscope are easily
comprehended after once hearing them,
but there are others, which require dil-
igent practice with the instrument, to un-
derstand correctly; such as haemophony,
the different species of rattle & all of which
shall be noticed in due time.

The phenomena produced by the aid of
the stethoscope I shall examine under the
two heads of healthy, and diseased. Under the
first, I shall investigate 1st the voice, 2nd the
respiration, and 3rd the circulation—Under the
first head, comes the phenomena called,
1st pectoriloquism, 2nd haemophony,
3rd metallic tinkling, and 4th the va-
rious kinds of rattle.

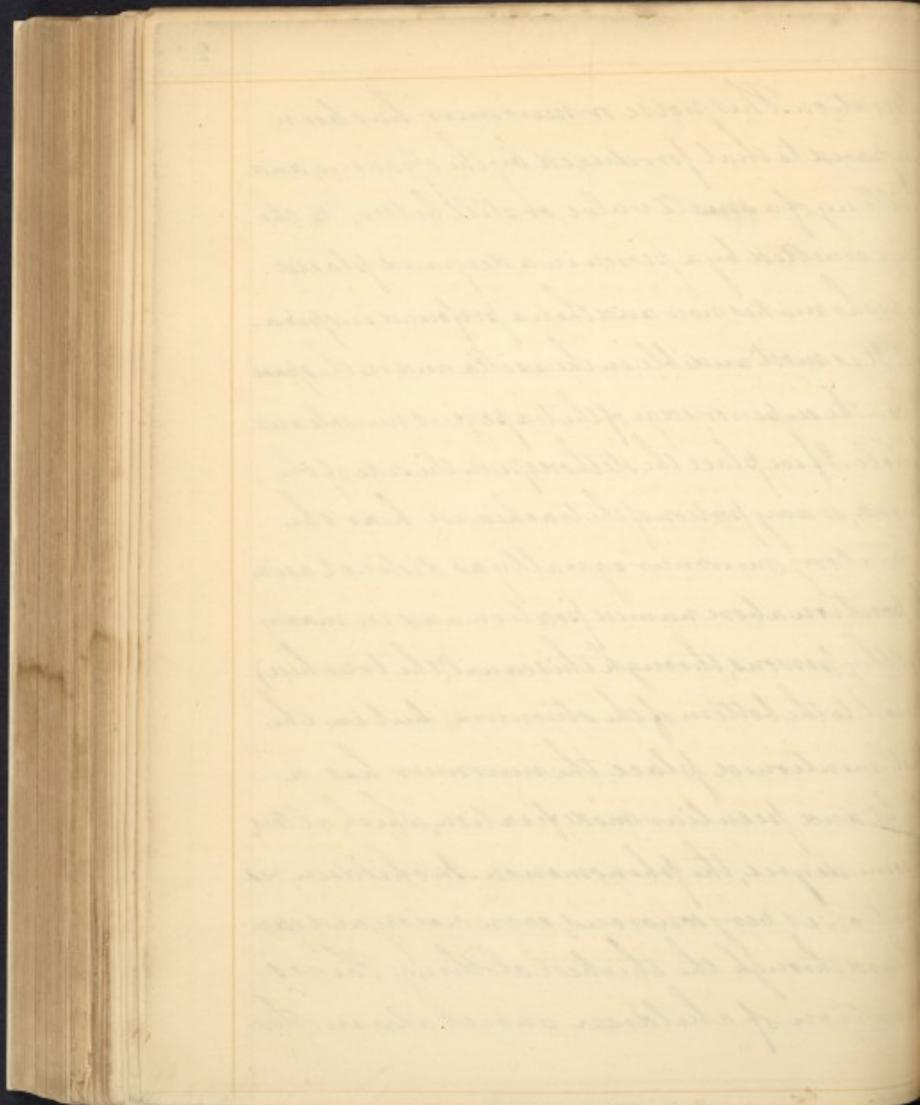
The first subject which naturally

presents itself under this head, is 1. The Voice. The vibration which is so sensible to the hand placed upon the thorax whilst a person speaks or sings, is very obscure under the stethoscope, and has been said by some, not to exist at all. The parts in which this vibration is most sensible, are the axilla, the back, between the spine and edge of the scapula and in the anterior and superior part of the chest near the angle formed by the union of the clavicle with the sternum. When the tube is applied, the voice generally appears stronger and nearer to us; but on the inferior part of the thorax, it is remote and much weaker than in the position above mentioned.

2. The Respiration. On applying the cylinder, with the funnel-shaped end open, to the chest of a perfectly healthy subject, we hear the respiratory murmur, which is very distinct, answering to



inspiration. This noise or murmur has been compared to that produced by the opening and shutting of a small valve, or still better, to the sound emitted by a person in a deep and placid sleep, who makes now and then a profound inspiration. It is most audible in the axilla and in the space between the superior edge of the trapezius muscle and clavicle. If we place the stethoscope on the side of the larynx, or any portion of the trachea, we hear the respiratory murmur equally as distinct as in the position above named position and in many healthy persons, through this canal (the trachea) almost to the bottom of the sternum; but in the last mentioned place, the murmur has a slight and peculiar modification, which alters, in some degree, the phenomenon. In children, respiration is very sonorous, even noisy, and can be heard through the thickest clothing. The respiration of children varies also in other



repects from that of adults, but these peculiarities are only to be acquired by comparing the two. But some adults enjoying perfect health have their respiration different from the majority of persons, particularly women of a nervous temperament, and preserving in other respects, the appearance of extreme juvenility. When the respiration resembles that of children, no matter at what age, it is denominated puerile or infantile. This is not caused by dyspnoea or asthma, for in patients labouring under such complaints, the respiration is entirely different from the puerile. External respiration being loud, does not affect the respiratory murmur, for the external sound is made by the air impinging upon the fauces. M. Lassere examined a patient at the Hospital Necker, whose habitual respiration could be heard at the distance of twenty feet, and found

the true respiratory murmur to be less than ordinary. If the respiratory murmur is perfectly distinct, we may be assured there is no effusion in the cavity of the pleura, or engorgement of the lungs or bronchies, by blood, mucus, or pus.

3. The Circulation. I have but little to say of the heart in a state of health; so far the best, I have thought the following considerations best to be made before I enter upon the diseases of that organ. If application is made of the stethoscope to the cardiac region of a healthy subject, with a well proportioned chest and heart, we hear the alternate contractions of the auricles and ventricles; but if the heart is not well proportioned, or is moved from its natural seat, it is heard, in applying the cylinder, without the cardiac region, that is, without the space included under the cartilages of the fifth, sixth and

with the ribs and lower extremity of the sternum. The sound, under ordinary circumstances, conveyed to the tube, is doubled, or answering as two to one of each arterial pulsation. This double sound is produced by the alternate contractions of the auricles and ventricles, each being distinctly heard and making quite different impressions upon the ear. The auricles produce a clear, quick and crackling noise, whilst the ventricles make a duller and more prolonged sound, coinciding exactly to the arterial pulse and the shock which is given to the varieties of the thorax. The sound heard at the end of the sternum is produced by the right side of the heart; that between the cartilages of the ribs, by the left.

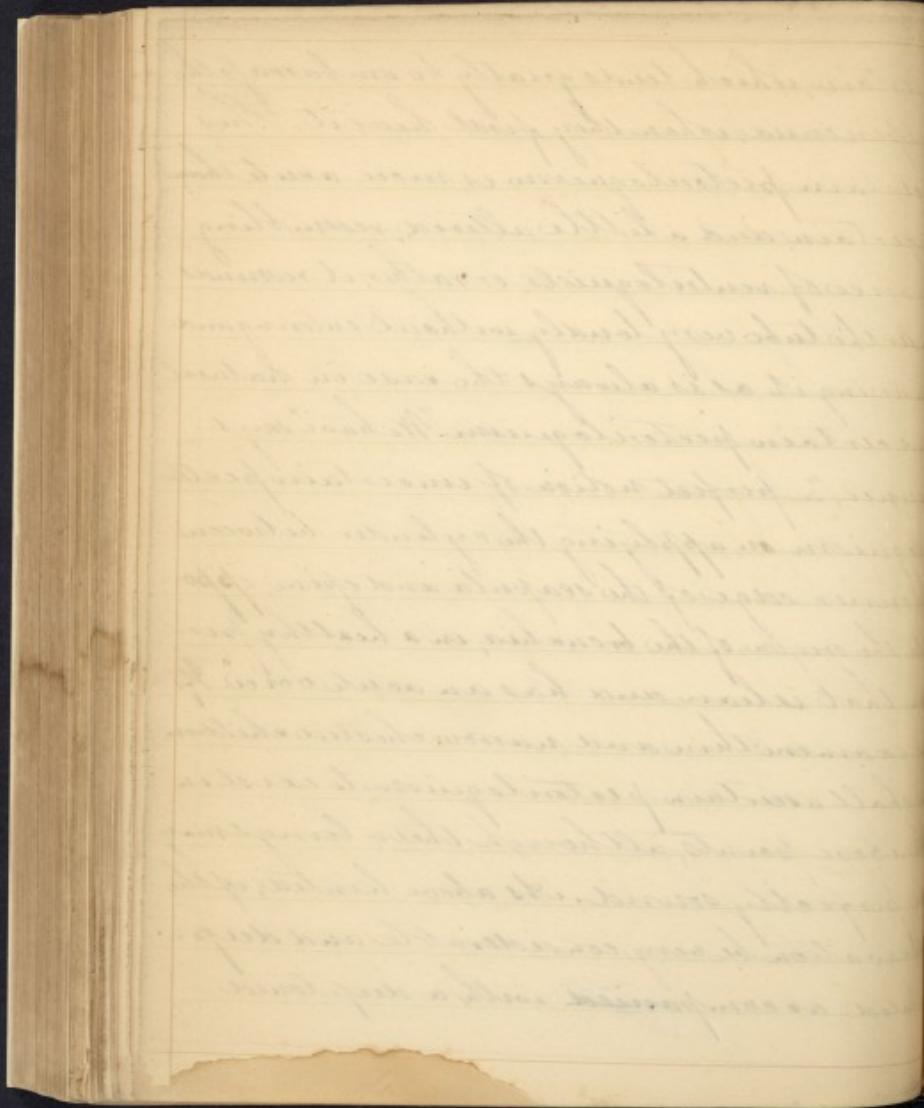
We come now to our second class of phenomena indicated by the aid of the stethoscope; namely, those whilst some of the inter-

nal parts are in a state of disease. The most important of these and one which naturally strikes us first, is 1. Pectoriloquism. Whilst Dr Lanneau was investigating the resonance of the voice in healthy and diseased subjects, he was surprised by a phenomenon entirely new to him. This took place, for the first time, in a female labouring under a bilious fever, accompanied by a violent cough having the appearance of pulmonary catarrh. About twenty of the patients in the hospital were found to produce this phenomenon, all of whom were consumptive, and most of them, appeared to be in an advanced stage of the disease. The voice in these cases seemed to come directly from the chest, entering the cylinder and passing on to the ear. When some of these unhappy patients were carried off by the natural course of the malady, post mortem exam-

instions prove pectorilognism, as had been
injected, to depend upon an excavation in
the substance of the lungs, communicating with
the bronchial tubes by one or more foramina.

Pectorilognism is most distinct in persons ha-
ving a sharp voice, and in whose lungs, the
excavation adheres by its edges to the pleura;
but if the excavation be very deep seated and
the voice of the patient coarse, we hear pectoril-
ognism very indistinctly. If the tube is applied
to the trachea or larynx of a healthy person we
hear pectorilognism as distinctly as in cases of
tuberculous excavation. This curious phenome-
non, generally, upon two or three trials, informs
us if there exists an excavation of the lungs
communicating with the bronchia. It is also
more distinct when there exists a small ex-
cavation, than in case of a very large one.
There is a kind of pectorilognism, denominated

uncertain, which tends greatly to embarrass the inexperienced, when they first hear it. This uncertain pectoriloquism is more acute than the certain, and a little altered, resembling the voice of ventriloquists, or rather, it resounds under the tubo very loudly without entering and traversing it as is always the case in natural and certain pectoriloquism. We have, says Launce, a perfect notion of uncertain pectoriloquism on applying the cylinder between the inner edge of the scapula and spine, opposite the origin of the bronchia, in a healthy person that is lean and has an acute voice. If we examine thin and narrow chested children, we shall ascertain pectoriloquism to exist in the above points, although their lungs may be perfectly sound. As above hinted, if the excavation be very considerable and deep seated, accompanied with a deep sound

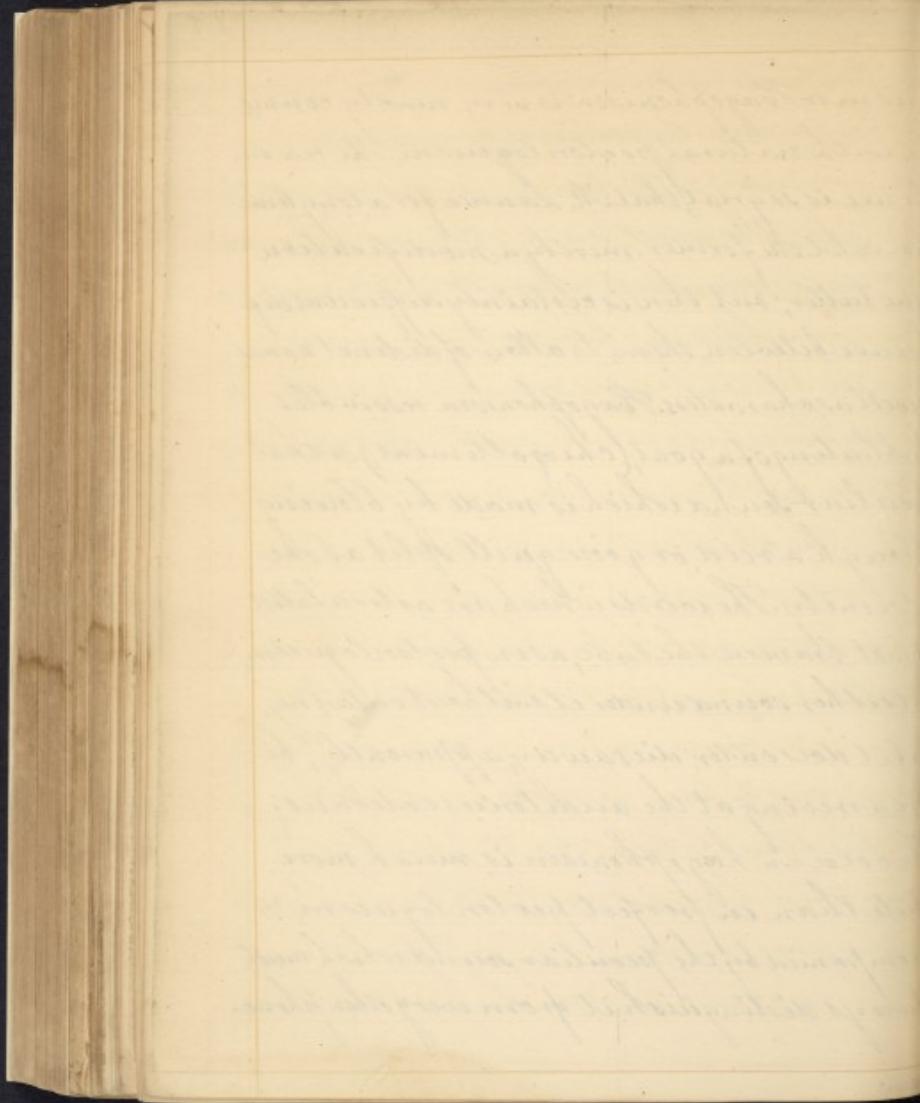


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voice, pectorilism is obscure. By watching
the phenomena of pectorilism, as they
occur, we may often trace the progress of the
disease. The most complete extinction
of the voice does not affect pectorilism,
M. Laennec having heard it distinctly,
when the patient was unable to utter a
single articulate sound. Although it is
one of the pathognomonic signs of several dis-
eases of the chest, it is so varied and modi-
fied, as to render it absolutely necessary
to be very much experienced with it, before
daring to prognosticate the fate of those hap-
py beings whose sufferings make them
all anxious to hear our opinion of their fate.
This is the time of trial on the part of the phy-
sician, and here, we are to show the world
what degree of skill we possess.

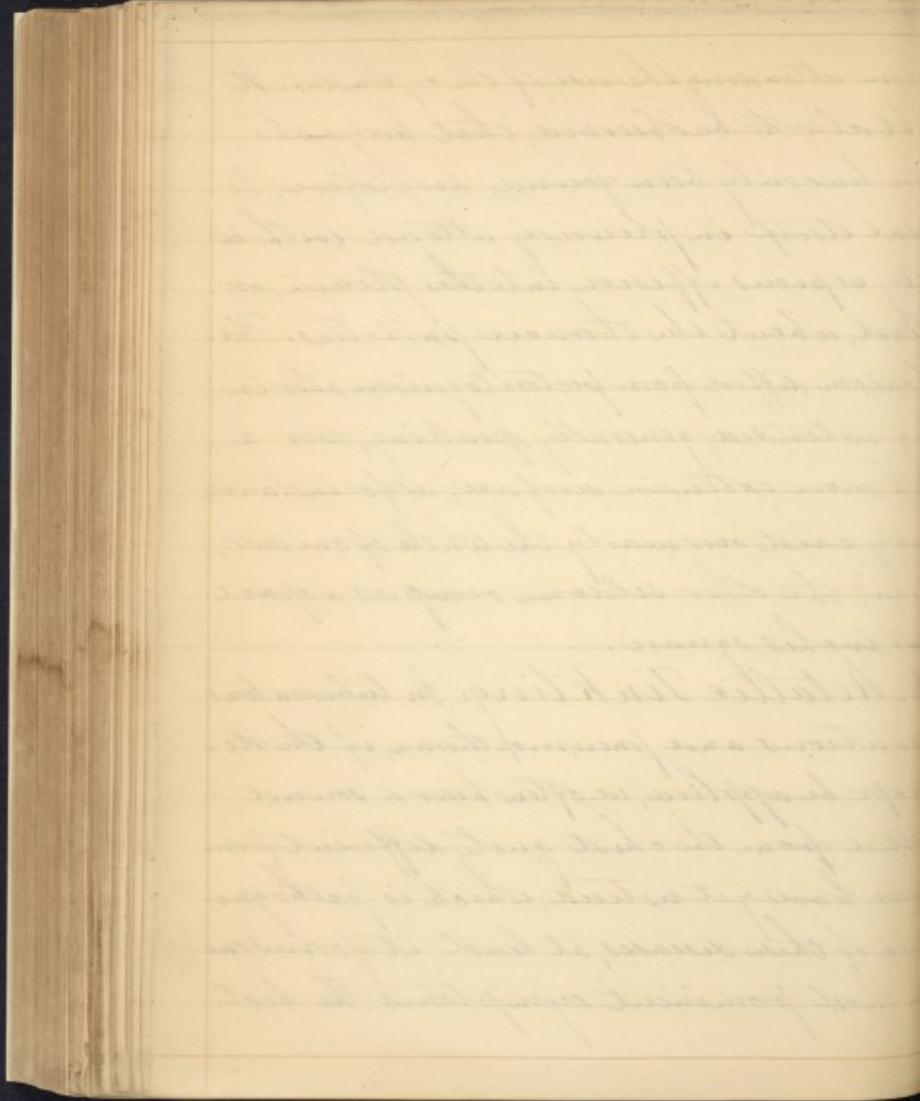
2. Hoarseness. Caput pectorilo-

quis or Hoagophonism is very nearly connected with natural pectorilognism. The resemblance is so great, that M. Laenne for a long time thought the former merely a modification of the latter; but there is certainly sufficient difference between them, to allow of distinct names, as well as characters. Hoagophonism resembles the bleating of a goat (cheugottement) or that peculiar sound which is made by blowing through a reed, or goose-quill split at the extremity. The words which are articulated do not traverse the tube, as in pectorilognism, but either sound under it without entering, or if it does enter, dies away, apparently, before arriving at the auditorius externus. The voice in hoagophonism is much more acute than in perfect pectorilognism, & accompanied by the peculiar sound which must always distinguish it from every other pheno-



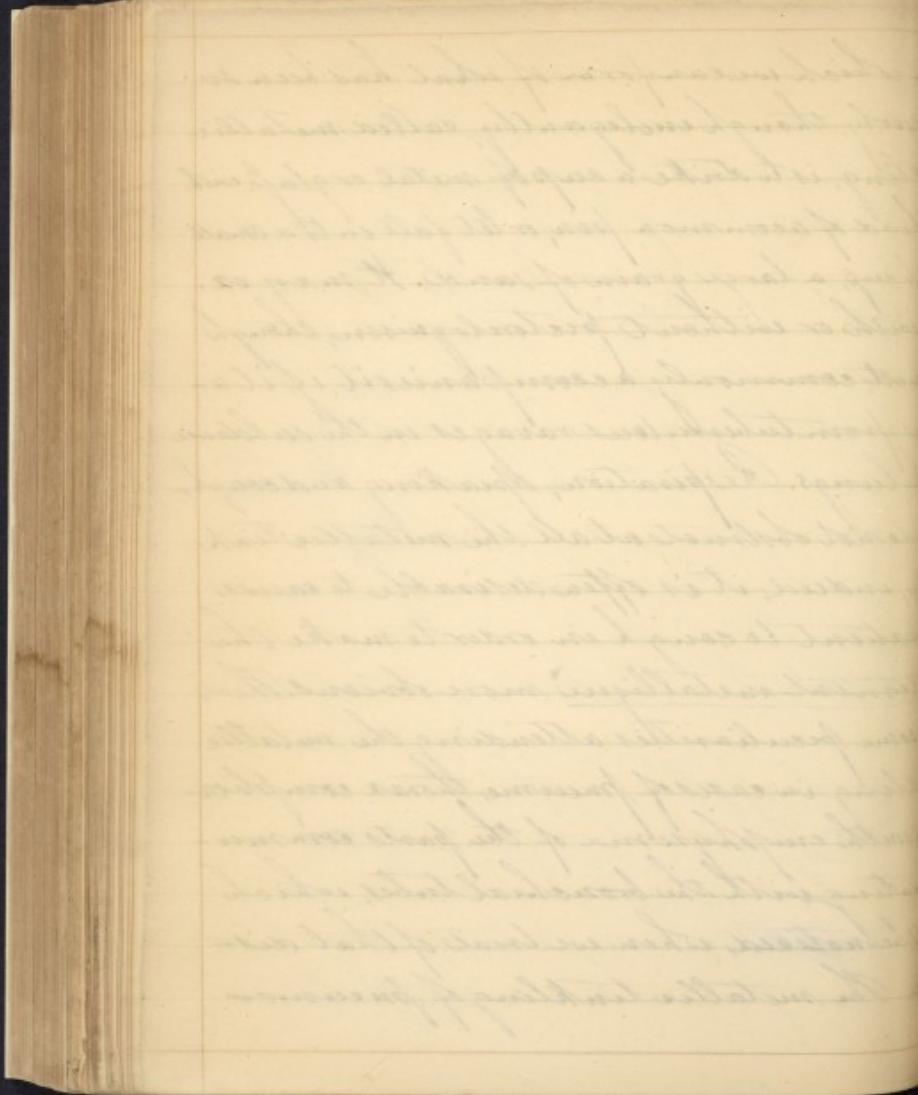
menon attending the use of the cylinder. It ought also to be observed, that haemophysis has only been found, heretofore, to present itself in pleurisy attend with a pretty copious effusion into the pleura, or at least, about the thoracic parieties. Haemophysis differs from pectoriloquism also in being extended, generally speaking, over a much more extensive surface; as for instance, it may exist over nearly the whole of one side, whereas, the other seldom occupies a space of two inches square.

3. Metallic Tinkling. In tuberculous excavations and pneumo-thorax, if the stethoscope be applied, we often hear a sound emitted from the chest quite different from any we have yet noticed, which is pathognomonic of these diseases, at least, it forms one of the most prominent symptoms. The best



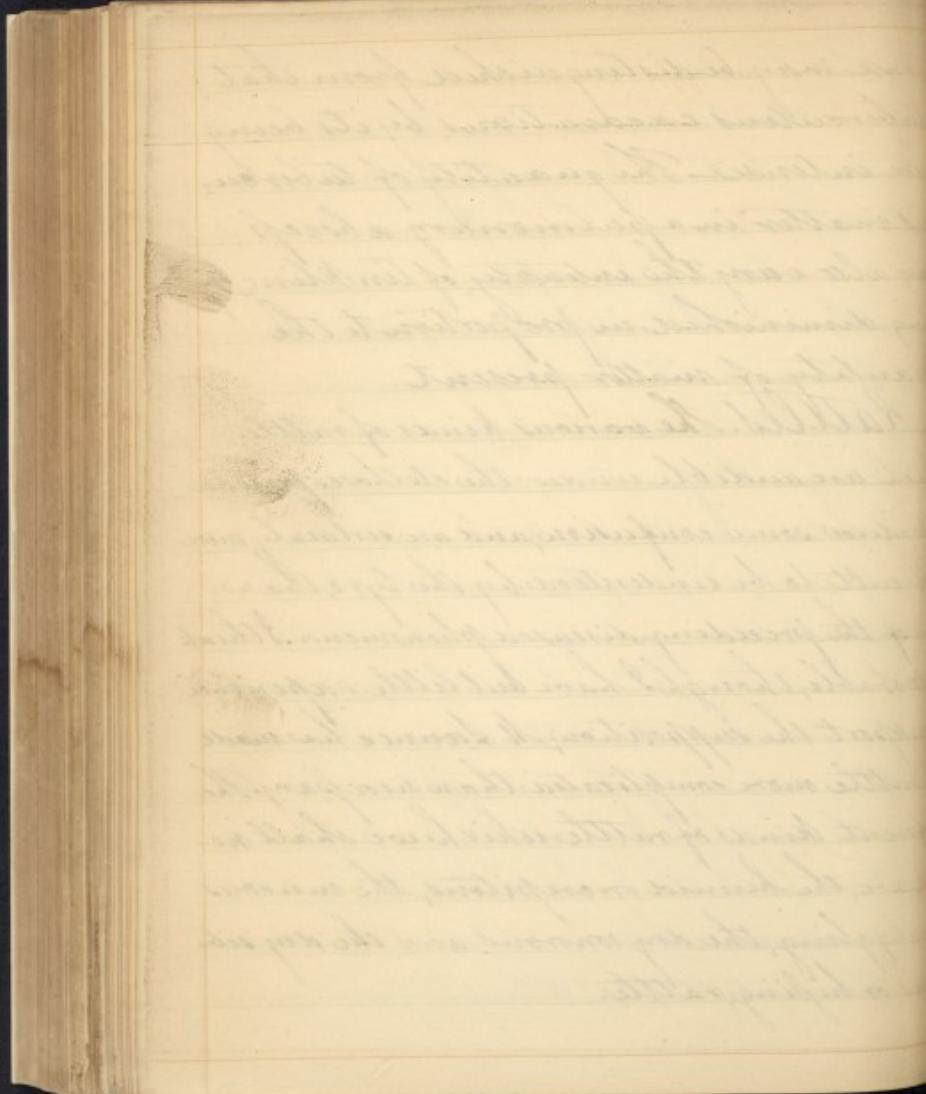
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idea which we can form of what has been so
properly, though inelegantly, called metallic
tinkling, is to strike a cup of metal, or glass, with
the head of a common pen, or let fall into a small
glass cup, a large grain of sand. It may ex-
ist with or without pleurologism, though
it most commonly accompanies it, if it ar-
rises from tuberculous ravages in the substance
of the lungs. Respiration, speaking and cough-
ing do not obstruct at all the metallic tink-
ling; indeed, it is often desirable to cause
the patient to cough in order to make the
internal metallique more obvious. There
are some peculiarities attending the metallic
tinkling in cases of pneumo-thorax complica-
ted with emphysema of the parts commu-
nicating with the bronchial tubes, which
will be noticed, when we treat of that dis-
ease. The metallic tinkling of pneumo-

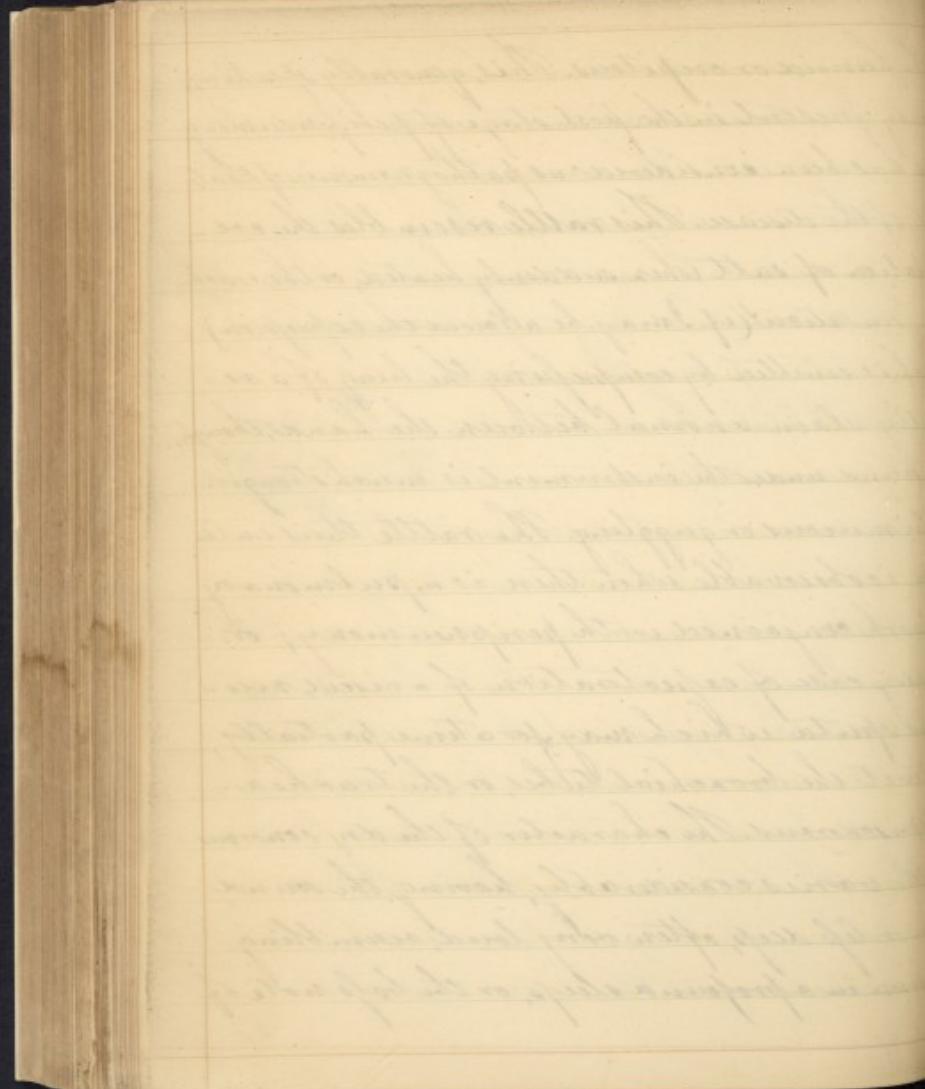


thorax may be distinguished from that of tuberculous excavations, by its being more intense. The quantity of tuberculous matter in a pulmonary abscess may also vary the intensity of tinkling, by being diminished in proportion to the quantity of matter present.

4. Rattles. The various kinds of rattle, which are audible under the stethoscope, tend to produce some confusion, and are certainly more difficult to be understood by the tyro, than any of the preceding diseased phenomena. I think it probable, though I have but little experience to support the supposition, M. Saunier has made the rattle more complicated than necessary. The different kinds of rattle which we shall notice, are, the humid or crepitous, the mucous or gurgling, the dry sonorous and the dry sibilous or hissing rattle.



1. The humid or crepitous. This, generally speaking, is only present in the first stage of peripneumony and has been considered as pathognomonic of that state of the disease. This rattle resembles the crepitation of salt when suddenly heated, or the crackling sensation (if I may be allowed the expression) such is emitted by compressing the lung of a recently slain animal between the hands, though the sound under the instrument is much stronger.
2. The mucous or gurgling. The rattle thus called, is observable when there is a pulmonary catarrh conjoined with peripneumony; or in any case of expectoration of a viscid mucous sputa which may for a time partially obstruct the bronchial tubes, or the trachea.
3. Dry sonorous. The character of the dry sonorous rattle varies considerably, having the sound more or less deep, often very loud, resembling a person in a profound sleep, or the bass note of



musical instrument, or "the cooing of a wood-pigeon". This last is sometimes so striking, that M. Lassere says the physician can hardly conceive that there is not one of those birds concealed under the patient's bed-clothing. The most common site of the dry sonorous rattle, is in pulmonary fistulae & dilated bronchia.

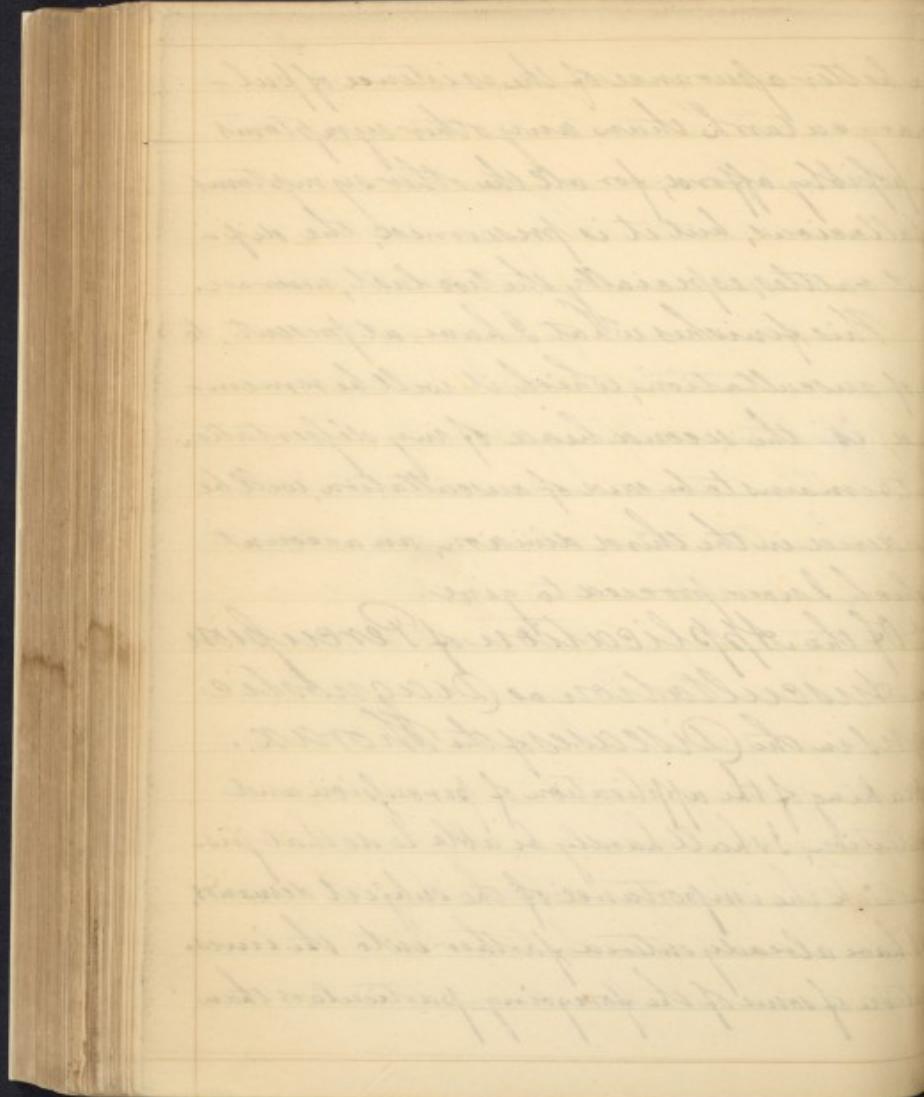
The dry sibilous or hissing, like the third species of rattle, is very much varied in its character. Sometimes it is like a prolonged whisper of various intonations; at others, cut short and emitting chirps like a small bird; sometimes, it resembles the separation of two oil-stones; and again, we hear a sound resembling the opening and shutting of a small valve. A noise is occasionally heard like the bursting of soap bubbles, when the cylinder is fixed opposite the large bronchial tubes or the trachea. The four kinds of rattle give

as a better appearance of the existence of pulmonary catarrh than any other symptoms can possibly afford, for all the other symptoms are fallacious, but it is presumed, the different rattles, especially, the two last, prove are.

This finishes what I have, at present, to say of auscultation, which, it will be remembered, is the second head of my dissertation. What remains to be said of auscultation, will be considered in the third division, an account of which, I now proceed to give.

3rd. Of the Application of Percussion and Auscultation as Diagnostic Signs in the Diseases of the Thorax.

In speaking of the application of percussion and auscultation, I shall hardly be able to do that justice which the importance of the subject demands, for I have already entered farther into the investigation of some of the foregoing particulars than



2.

1st first intended. I shall now, taking into consideration the copious manner in which I have treated the two former divisions, restrict my third as much as propriety will permit. The diseases of the chest will be arranged according to the organs in which they are located; and thus appear evidently to be 1st Of the diseases of the lungs, 2nd Of the pleura, and 3rd Of the heart.

1st Of the diseases of the lungs. Every one who is at all conversant with the diseases of the pulmonary apparatus must be immediately struck with the great frequency and fatality of phthisis pulmonalis; indeed, it has been very justly said to be one of the affroboria medicorum, when we reflect that of the immense number of persons afflicted with it, very few, if any, ever recover. Who engaged in an extensive practice has not

and a small amount of sand. The soil is
very sandy, containing many shells
of *Conus* and *Cardium*. The soil is
about 3 ft. deep. The soil is
very sandy, containing many shells
of *Conus* and *Cardium*.

often lamented the unhappy and inevitable
woe of the person who is gradually, but surely,
wasting away, day by day, under this irre-
tractable distemper.

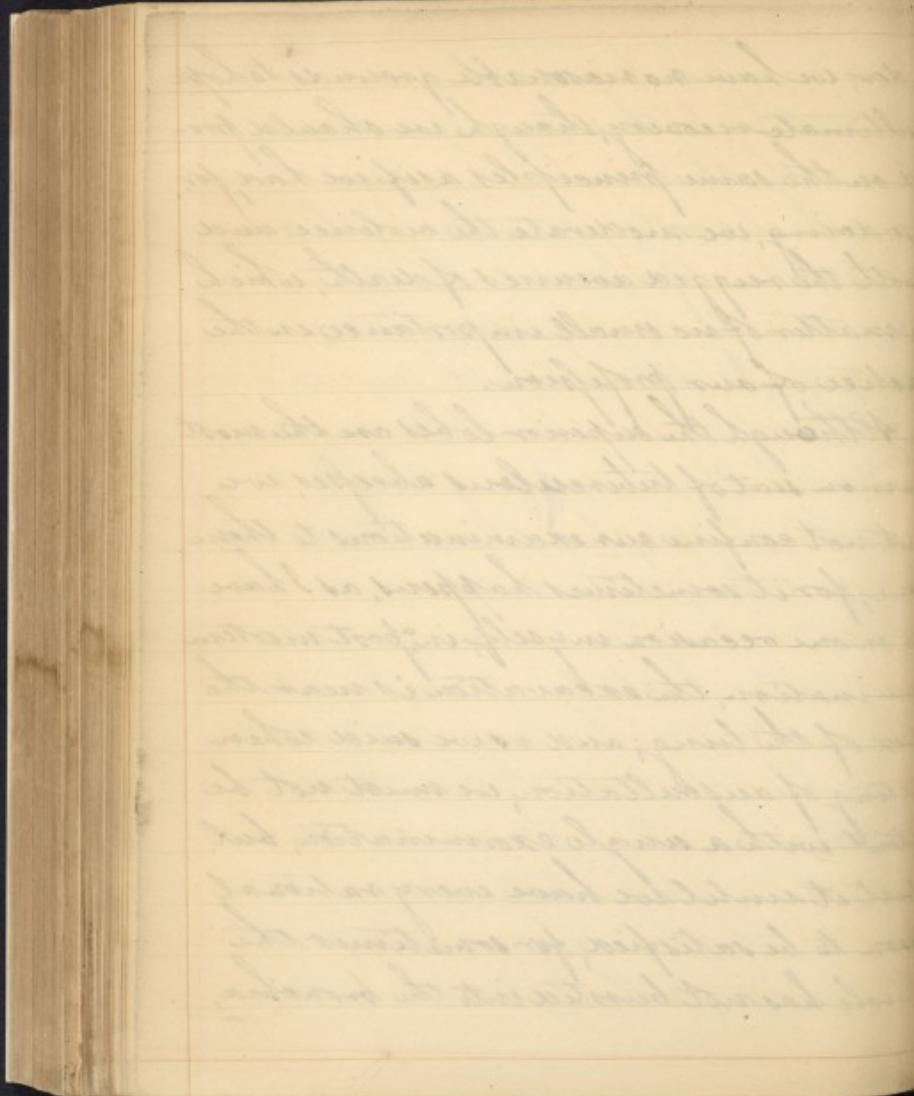
— And down he sinks amid the petile drift
Thinking o'er all the bitterness of death. Thompson.
Notwithstanding the acknowledged fatality of
phthisis pulmonalis, we once more, since the
application of mediate auscultation, begin
to entertain the flattering hope, that it yet is
to be more correctly understood, and that
we may be enabled to prescribe for it, in
its early stages, with as much certainty of
cure as in most other diseases which afflict
the human family. Though we are so sanguine
in our expectations of future good, neither
percussion or mediate auscultation, as yet,
affords us always indications of incipient
phthisis. If incipient tubercles are congrega-

ed, their perception by the dull sound, and
the stethoscope, by the absence of respiration,
together with other combined symptoms, af-
ford us the clearest indications of the danger
which is to be apprehended. Should we be so
fortunate as to detect phthisis pulmonalis
in this stage, I entertain not the least doubt,
we may, to say the least, avert the impending
storm for months, and even years: but un-
fortunately, the complaint is so insidious
and hope so long sustains the sinking suf-
fer, that our advice is never sought until
an excavation has taken place, together
with expectoration, hectic fever, and other
formidable appearances. After these symp-
toms supervene, all we can reasonably ex-
pect to do, is, to palliate and moderate
according to present exigencies. If pectoril-
equin exists on the application of the ey-

the first time I have seen it. It is
a small tree with a trunk about 12
inches in diameter. The bark is
smooth and greyish brown. The
leaves are opposite, simple, entire,
oval-shaped, pointed at the apex,
and rounded at the base. They
are about 4 inches long and 2
inches wide. The flowers are
yellow and are produced in
terminal cymes. The fruit is
a small, round, yellowish-orange
berry, about 1 inch in diameter.
The seeds are black and smooth.
The wood is very hard and
heavy. It is used for making
furniture and for building
houses. It is also used for
making tools and implements.
The bark is used for making
dyes and for medicine. It is
also used for making
paper and for writing on.

under, we have no reasonable grounds to hope
frustrate recovery, though we should pro-
ceed on the same principles as if we had, for
by so doing, we moderate the violence and
smooth the rugged avenues of death, which
is a matter of no small importance in the
practice of our profession.

Although the superior lobes are the most
common seat of tuberculous abscesses, we
must not confine our examinations to them
alone, for it sometimes happens, as I have
seen on one occasion myself, in post mortem
examination, the excavation is near the
spix of the lung; and as we said when
talking of auscultation, we must not be
content with a single examination, but
repeat it until we have every rational
reason to be satisfied, for sometimes the
tubercle has not bursted into the bronchia,



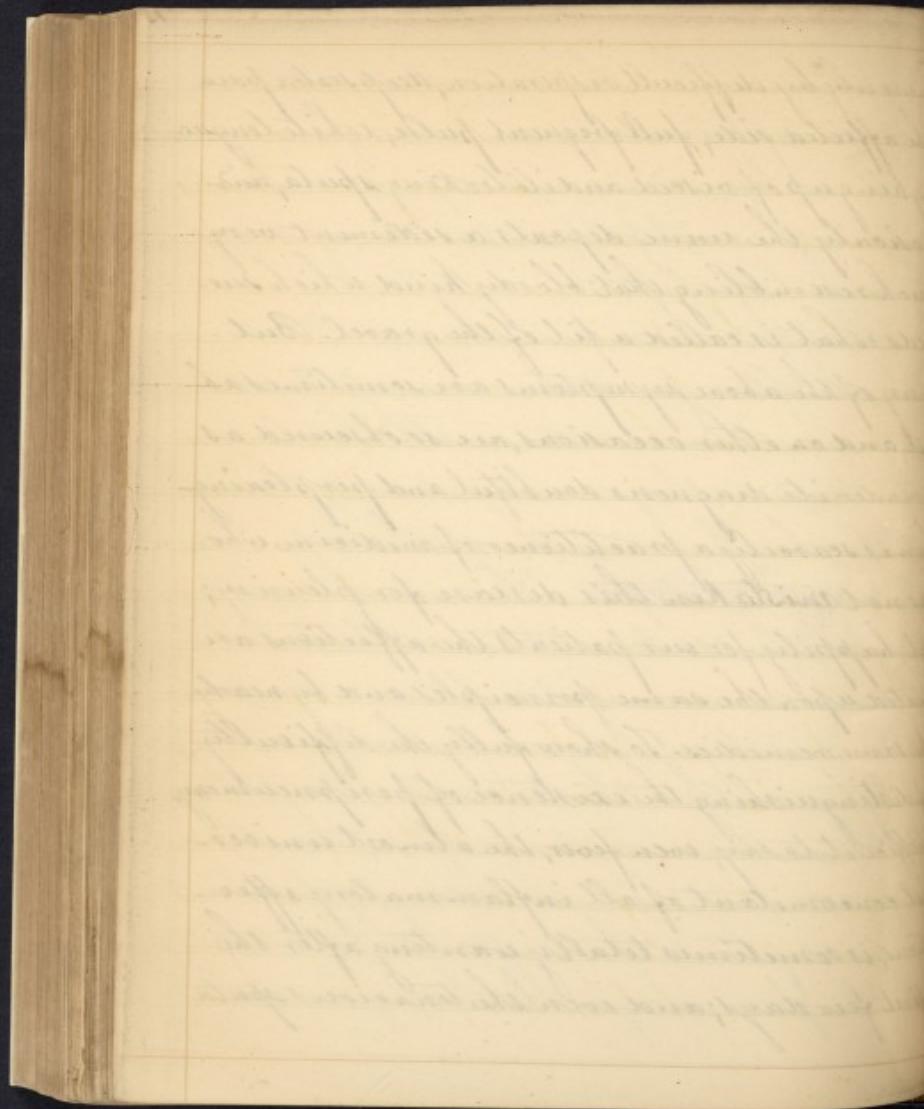
and even when it has, this aperture may be temporarily obstructed by tuberculous matter, and pectoriloquism must, under the conduction of the parts, be absent or extremely imperfect. M. Bayle in his work has fully demonstrated the fact, that cough, dyspnoea, puriform sputa, hectic fever, emaciation, and in short, all the symptoms of phthisis, arising merely from nervous affections, may be present, without the actual existence of the true disease. We are not at this enlightened period to be deceived by such appearances, for percussion and mediastinal auscultation always serve to guide us surely; and as a proof of this assertion, Dr Lannee declares, out of nearly three hundred patients which he has examined at the time of writing his ingenious book, he had never been deceived in a single instance.

for instance. When the common symptoms of consumption are present and percussion elicits a clear sound and respiration emits pectorilognism, I fear we have to suppose the case hopeless.

Brachophony and the metallic tinkling are often present and are to be observed in our examinations with the utmost attention, as they are sometimes, though rarely, the clearest of the stethoscopic intonations developed. The mucous or gurgling rattle, is also, at times, to be heard when the communications between the excavation and bronchia are partially blocked up by pus or other thick matter. But these last have their existence often in other diseases and shall accordingly be commented upon in their appropriate places.

Peripneumony is characterized most

commonly by difficult respiration, deep seated pain
in the affected side, full frequent pulse, white tongue,
swelling up of viscid and ill looking sputa, and
occasionally, the urine deposits a sediment very
much resembling that bloody kind which suc-
ceeds what is called a fit of the gravel. But
many of the above symptoms are sometimes ab-
sent, and on other occasions, are so obscured as
to render its diagnosis doubtful and perplexing.
There is scarcely a practitioner of medicine who
has not mistaken this disease for pleurisy;
but happily for our patients, the affections are
treated upon the same principles and by nearly
the same remedies. To show fully the difficulty
of distinguishing the existence of peripneumony,
 suffice it to say, even fever, the almost univer-
sal concomitant of all inflammatory affec-
tions, is sometimes totally wanting after the
first few days; and even the tenacious sputa

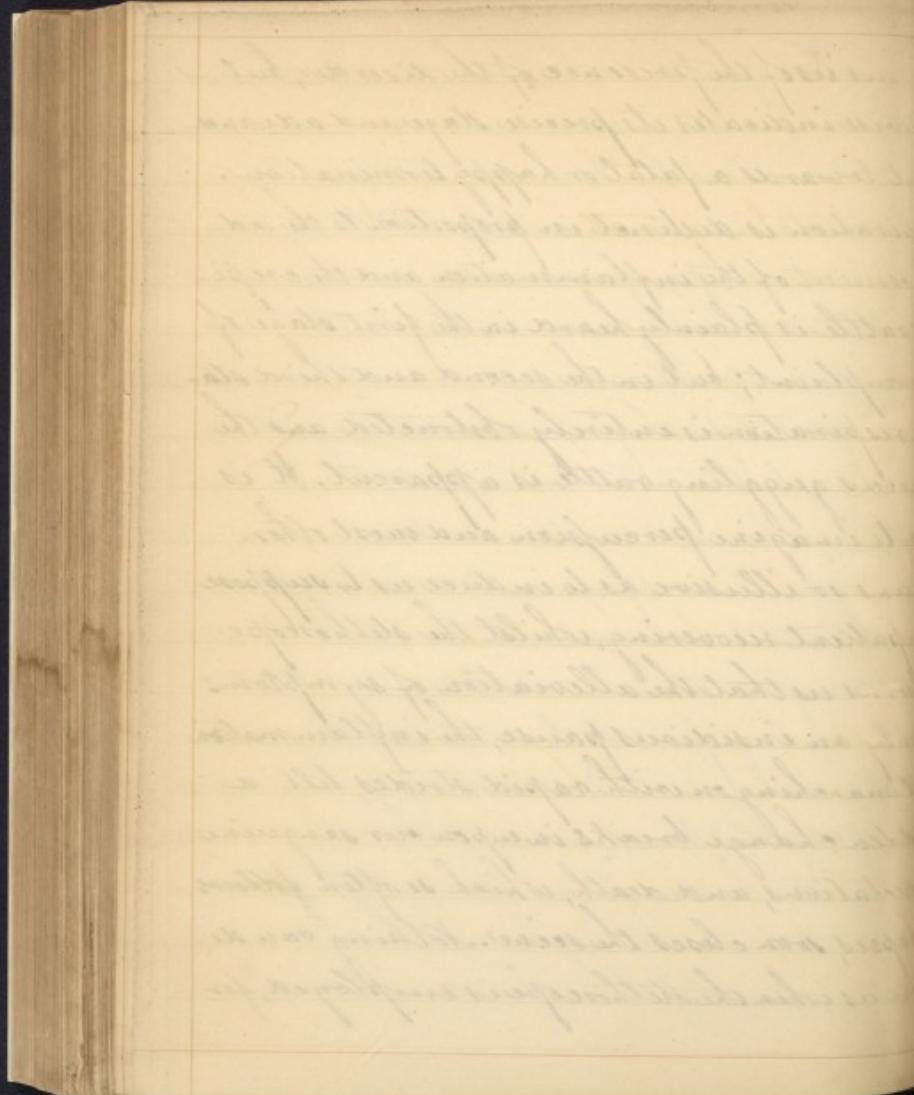


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may become, towards the latter part of the disease,
which is not to be thrown up and consequently
the patient lost by its accumulation. Percus-
sion assists us, now and then, in chronic, as
well as acute peripneumony, and could it
be applied in every case, we should have no
need for any other means than the dull sound
which is sent forth from the region of the affec-
ted lung; but it also occasionally leaves us as
much in the dark as the common symptoms
do, because we are frequently not called to the
patient until he is entirely too sore to bear
such an operation. Now what are we to do
when the chief part of the common symptoms
are either absent or obscured and a perception is
unattainable? We are to resort to a resource, which
fortunately, has, as far as observation extends,
no objections to its employment—This expe-
riment is the use of the stethoscope, which not only

and the dead will be much fewer
and the ground will be dry and hard
and the trees will be tall and straight
and the flowers will be many and beautiful
and the birds will sing and the bees will fly
and the butterflies will flutter and dance
and the grass will be green and the flowers will be red
and the leaves will be yellow and the fruit will be ripe
and the water will be clear and the air will be fresh
and the sun will be bright and the moon will be full
and the stars will be many and the sky will be blue
and the clouds will be white and the rain will be soft
and the wind will be gentle and the earth will be fertile
and the people will be happy and the animals will be free
and the world will be a better place for all.

informs us of the presence of the disorder, but
it likewise indicates its precise stage and advance-
ment towards a fatal or happy termination.
Respiration is distinct in proportion to the ad-
vancement of the inflammation and the crepi-
tus rattle is plainly heard in the first stage of
the complaint; but in the second and third sta-
ges, respiration is entirely obstructed and the
mucous gurgling rattle is apparent. It is
easy to imagine percussion and most other
means so illusive as to induce us to suppose
our patient recovering, whilst the stethoscope
informs us that the alleviation of symptoms
is only an insidious pause, the inflammation
still marching on with rapid strides, till a
sudden change breaks in upon our sanguine
expectations, and death, which so often follows
slaps, soon closes the scene. Nothing can de-
ceive us when the stethoscope is employed, for



the signs afforded by it are invariable, and let
appearances be ever so flattering, we know when
danger is approaching and are prepared for
the issue. When the inflammation is subsiding,
the respiration is obvious first in the superior
lobe of the lung affected, and it gradually
enlarges as the inflammation is subdued.
There is no instance of the disease under consider-
ation, in which percussion can be used, that
will prohibit mediate auscultation; but the
cylinder, I think, I have clearly shown, will
serve us when every other means shall have
failed.

One of the most frequent, and not least
dangerous maladies to which we are daily ex-
posed, is pulmonary catarrh. I shall, of course,
run into no detail of the history, symptoms,
and cure, but shall content myself with ob-
serving, that the symptoms are frequently

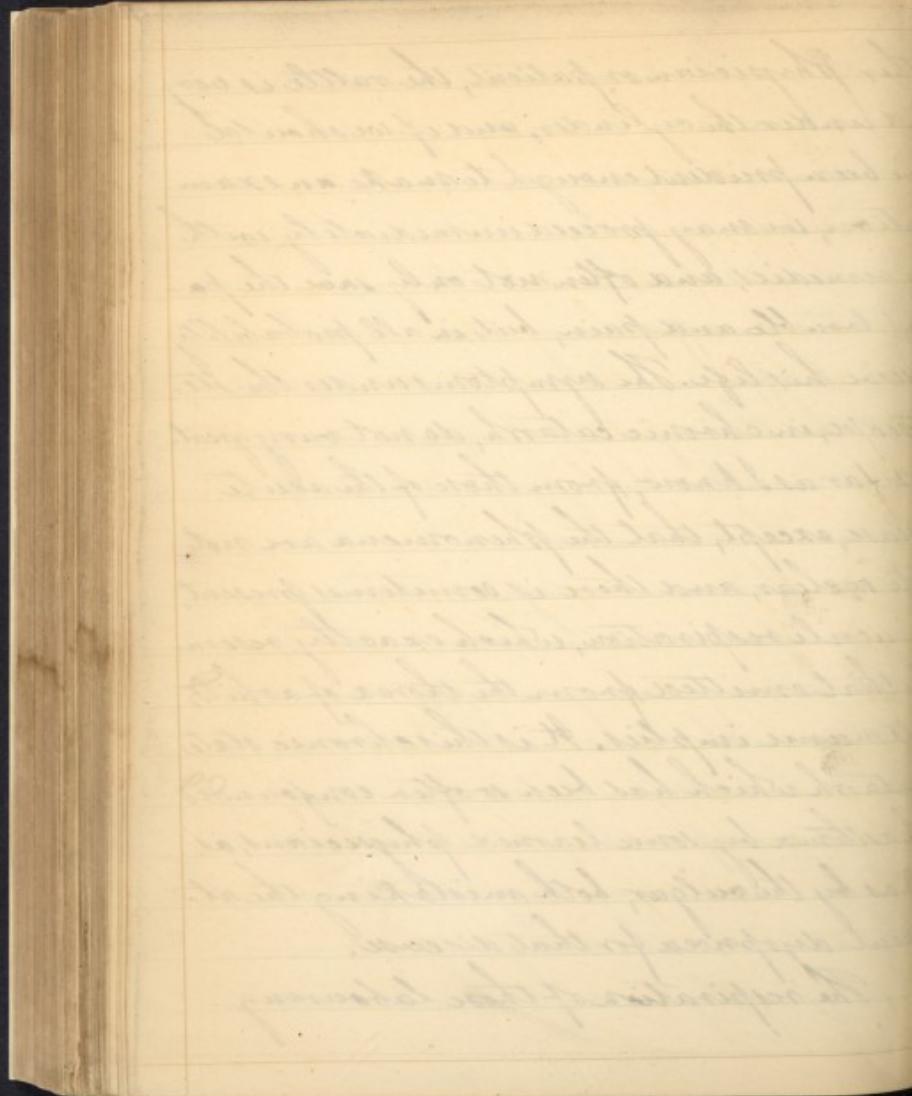
Dear Dr. Davis and your family
I am writing to you to tell you about my
son who is now in college at the University of
Michigan. He is a sophomore and is doing well.
He is studying engineering and is very interested
in his studies. He is also involved in several
clubs and organizations on campus. He is a
very good student and is always working hard.
I am proud of him and I hope he continues to
do well in his studies and in his personal life.
I am sending you some photos of him from
his first year in college. Please let me know if
you would like to see more.

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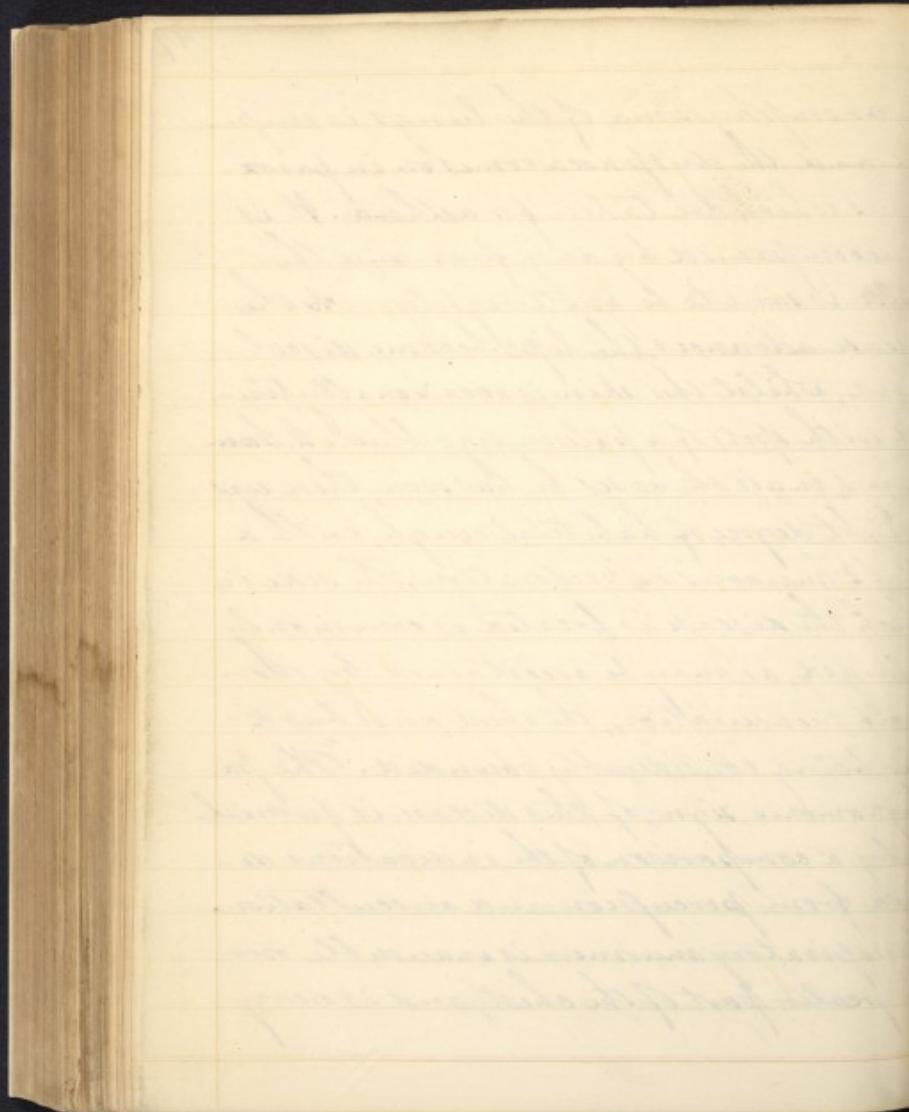
fallacious, if we do not resort to immediate auscultation, aided by percussion. Besides the common indications of the presence of pulmonary rattle, which, generally, are obvious enough, the four species of rattle described in our second division, afford very correct, and I might venture to affirm, almost infallible indications. Either the crepitous, the mucous gurgling, the dry sonorous, or the hissing rattle are prevalent from the commencement to the termination, and these are modified according to circumstances and the actual state of the disease, the two former generally presenting themselves in the commencement, and one, & both of the latter, in its termination, though these have modifications which it will be impossible to notice on the present occasion. At the onset, when the convaga &c. are so very slight as hardly to excite the attention of

whether physician or patient, the rattle is very
loud under the cylinder, and if we should
have been prudent enough to make an exam-
ination, we may proceed immediately with
our remedies, and often not only save the pa-
tient trouble and pain, but in all probability
preserve his life. The symptoms under the ste-
thoscope, in chronic catarrh, do not vary great-
ly, so far as I know, from those of the acute
disease, except, that the phenomena are not
quite so clear, and there is sometimes present,
the puerile respiration, which exactly resem-
bles that emitted from the thorax of a child,
its name implies. It is this chronic state
of catarrh which has been so often confounded
with asthma by some learned physicians, as
well as by the vulgar, both mistaking the at-
tentive dyspnoea for that disease.

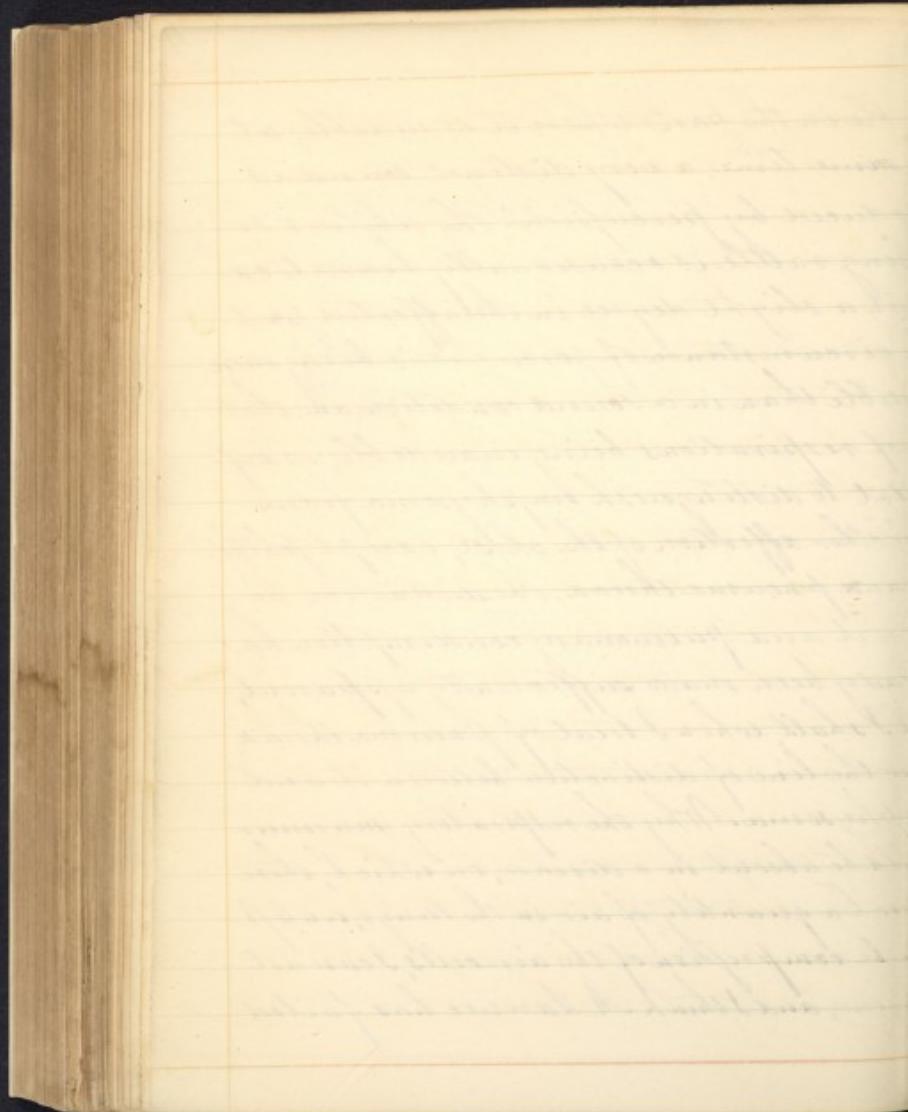
The respiration of those labouring



under emphysema of the lungs is impeded and the dyspnoea comes on in paroxysms which are taken for asthma. It is unaccompanied by any fever and the pulse is said to be quite regular. As the disease advances the lips become discoloured, whilst the skin is occasionally tinged with spots of a pale indigo blue. Mr. Saunders says, in all the cases he has seen, there was a slight degree of habitual cough, with a slight mucous expectoration. The side in which the disease is located is commonly enlarged, as may be ascertained by ova-
varic measurement, the chest, and back also, being considerably rounded. The pa-
thognomonic sign of this disease is furnish-
ed by a comparison of the indications de-
rived from percussion and auscultation.
The respiratory murmur is inaudible over
the greater part of the chest, and is very

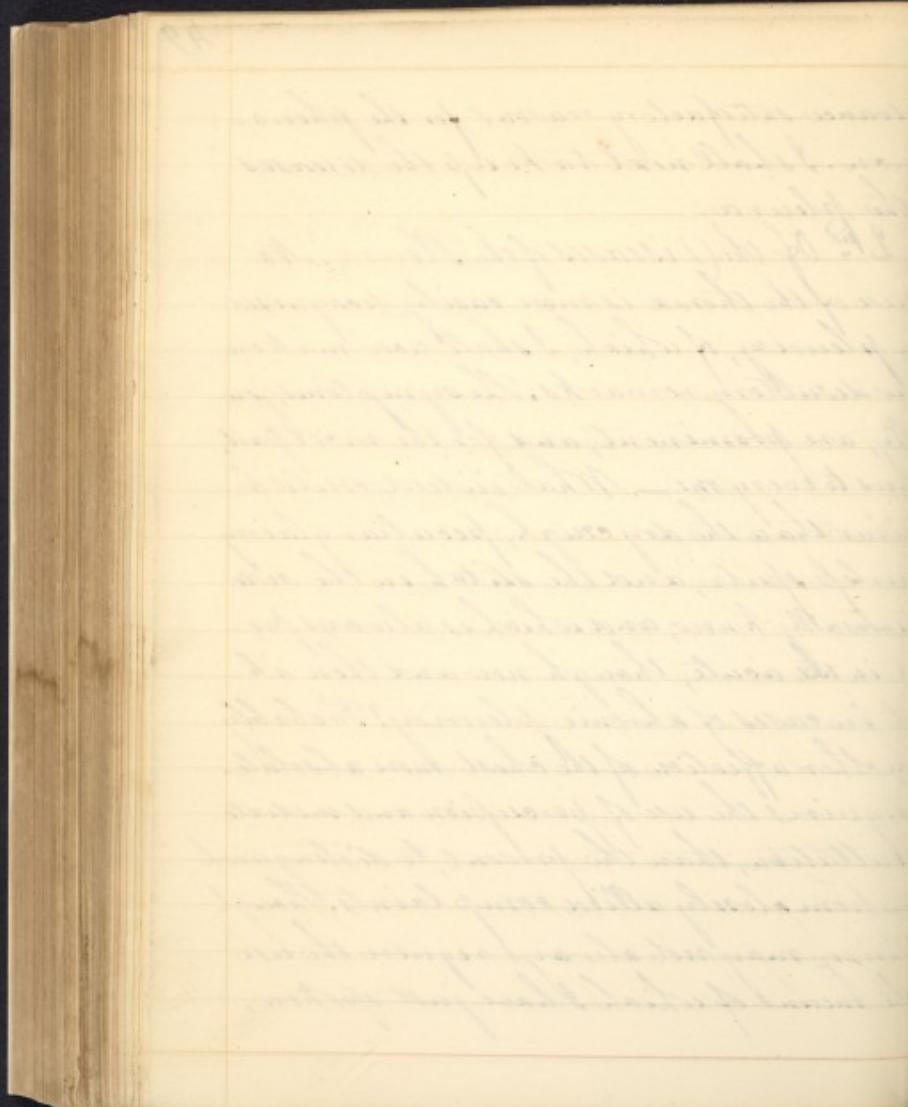


fuble in the parts where it is audible; at the same time, a very distinct sound is produced by percussion. The sibilous or hissing rattle is occasionally heard to exist in a slight degree in the affected part. The circumstance of percussioris being more audible than in a sound condition, and that of respirations being inaudible, is sufficient to distinguish emphysema from any other affection of the chest, except pathia et ana pneumo-thorax. The distinction between it and pulmonary consumption has already been made sufficiently apparent, and I shall when I treat of pneumo-thorax, draw the line of distinction between it and emphysema. Why the respiratory murmur should be absent in a disease, in which, there is such a quantity of air in the lungs, unless there be compression of the air-cells, I can not imagine, and I think M. Larivee has failed

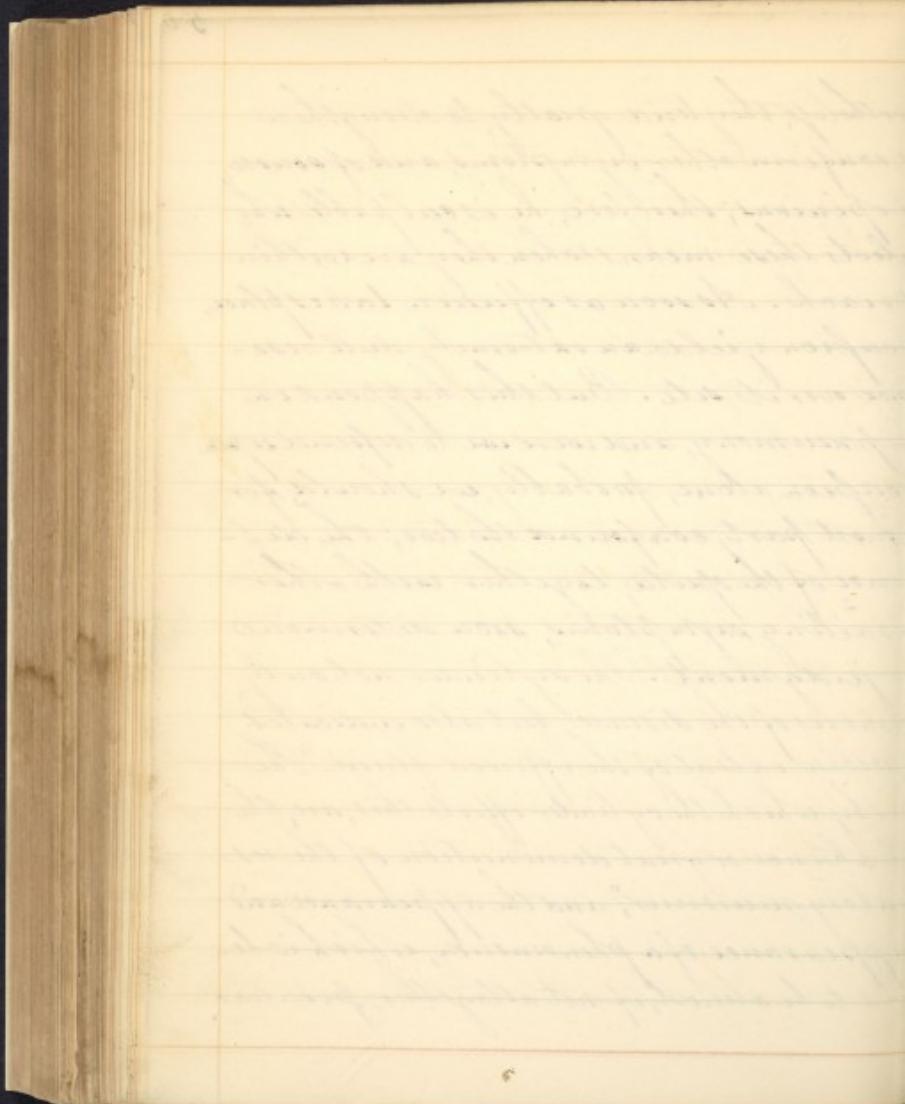


to advance satisfactory reasons for the phenomena. I shall next take up the diseases of the pleura.

2^o Of the Diseases of the Pleura. No disease of the thorax is more easily recognised than pleurisy, of which, I shall now make a few desultory remarks. The symptoms, generally, are prominent, and for the most part, obvious to every one — What indeed could be plainer than the dry cough, peculiar glairing, cloverleaf spuma, and the stitch in the side universally known, and which is always present in the acute, though now and then absent in cases of chronic pleurisy? Probably very other affection of the chest more absolutely requires the use of percussion and mediate auscultation, than the present, to distinguish them from closely allied complaints. Though pleurisy may not always require the use of the means of which I have just spoken,

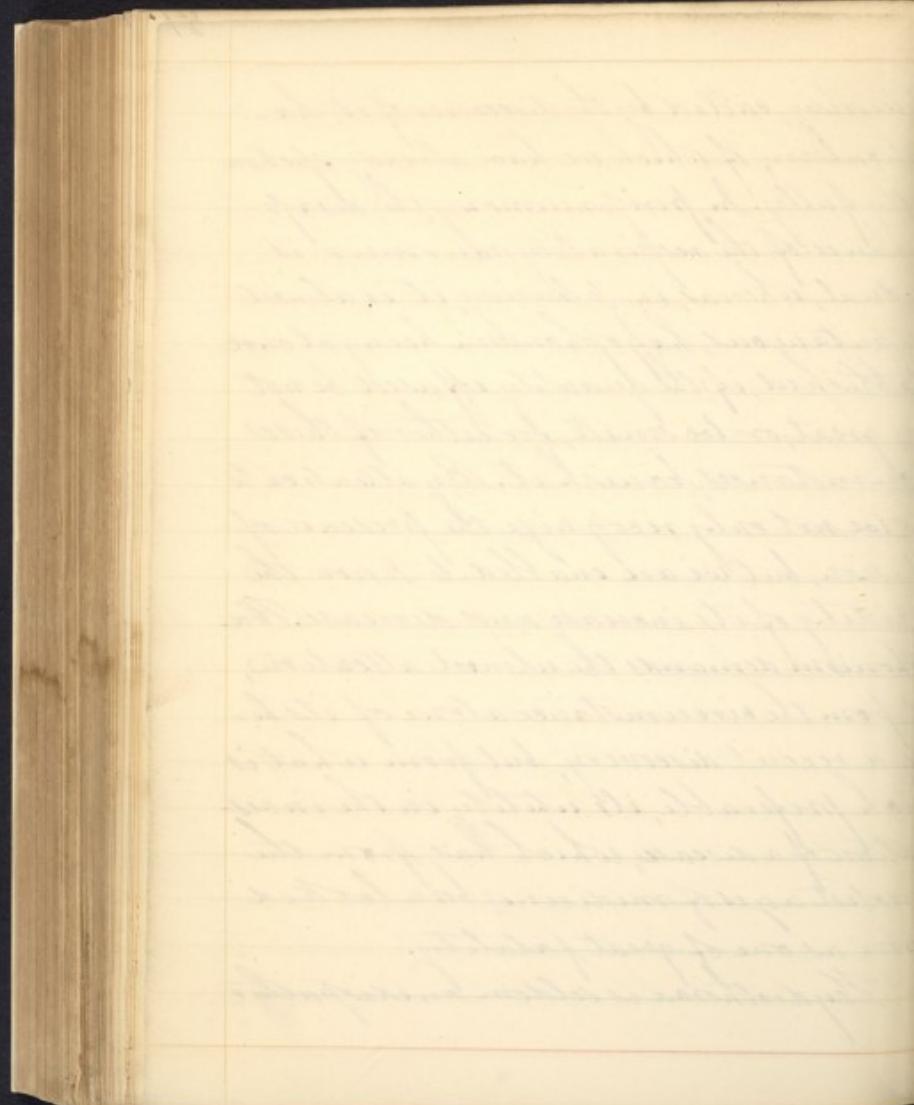


nevertheless, they tend greatly to strengthen
and confirm other symptoms, and of course,
our opinions; therefore, he is culpable who
neglects these means when they are within
his reach. As soon as effusion takes place,
percussion yields an extremely dull reso-
nance over its site. But this happens in
pneumonia, and were we to depend upon
percussion alone, probably, we should, for
the most part, confound the two; the dif-
ference of the sputa, together with other
prevailing symptoms, soon determine
our judgment. The cylinder not only
informs us of the disease, but also indicates
the precise extent of the effused fluid. The
signs by which the cylinder effects this, are, the
total absence or great diminution of the res-
piratory murmur; and the appearance and
disappearance of a phenomenon, which is be-
lieved to be almost, if not altogether, peculiar

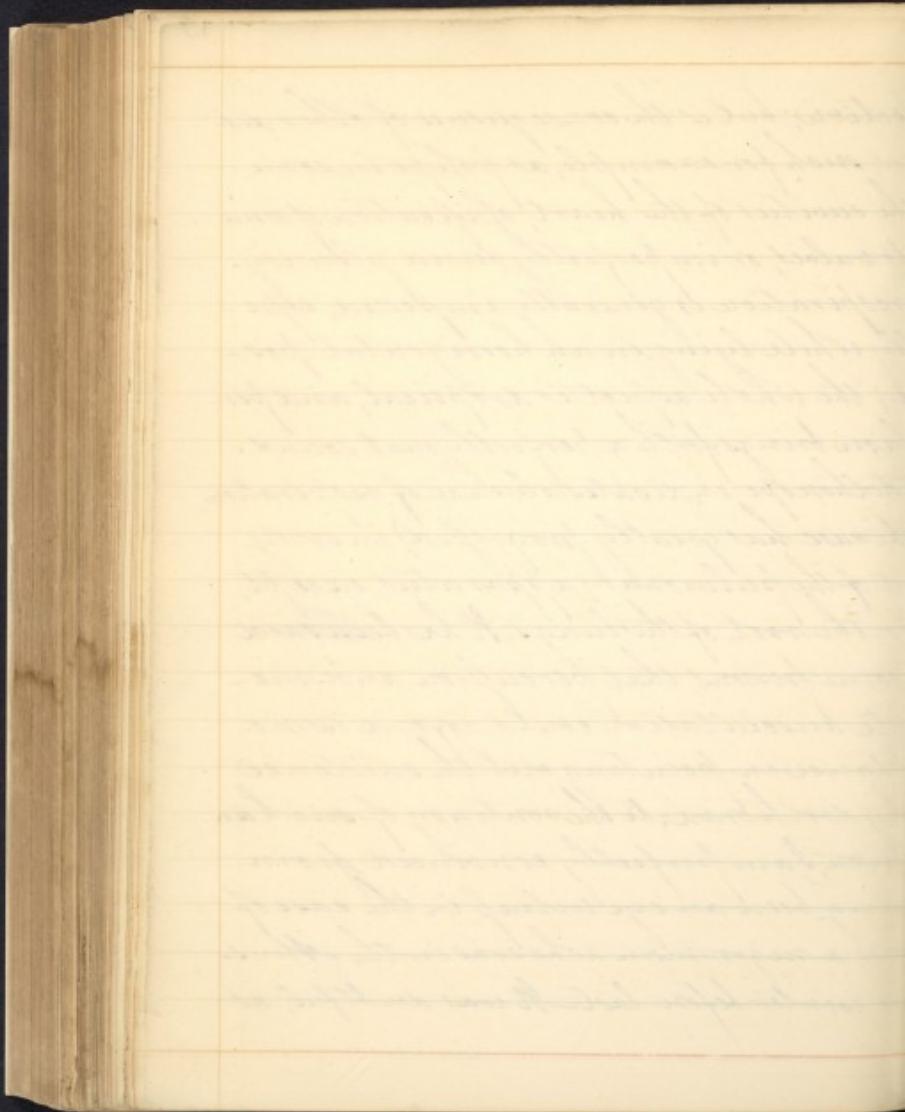


to pleurisy, called by the discoverer of it, haemophonia, of which we have already spoken very fully. In peripneumony, the disappearance of the respiratory murmur is gradual, whereas, in pleurisy, it is almost instantaneous, hydrophonia being at once established; if the quantity effused be not very great, or too small, for either of these instances banish it. By attention to this, we not only recognize the presence of effusion, but we are enabled to know the rapidity of its increase and decrease. Haemophonia demands the utmost attention, not from the circumstance alone of its being a recent discovery, but from what is much preferable, its utility in the investigation of a disease, which has, from the remotest ages of medicine, been looked upon as one of great fatality.

Hydrothorax is seldom an idiopathic

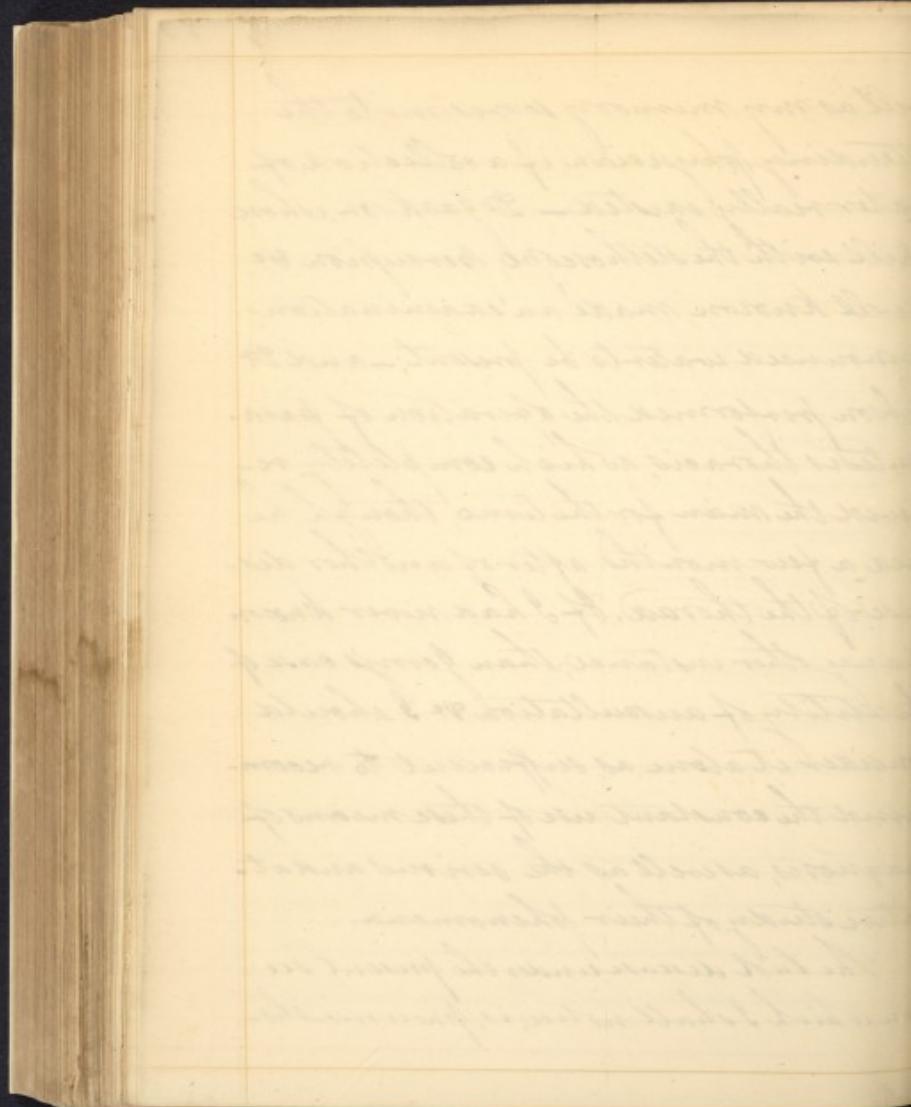


affection, but is the consequence of other diseases, such for example, as polypi in some of the cavities of the heart, ossification of some of its valves, or imperfectly curta pleurisy. The respiration is generally impeded, especially while lying in an horizontal posture; the whole aspect is drooping, and percussion brings forth a perfectly flat sound. The stethoscope indicates a disease of respiration, if the case has greatly progrised, in every part of the pulmonary apparatus, except, near the root of the lungs. It has been said by some persons, that percussion and auscultation could afford no assistance in pointing out the existence of hydrocephalus; to the contrary of such an opinion, I am perfectly convinced from having been an eye witness in the case of Jerry, a negro man who was in the almshouse winter before last.—It was doubtful, as

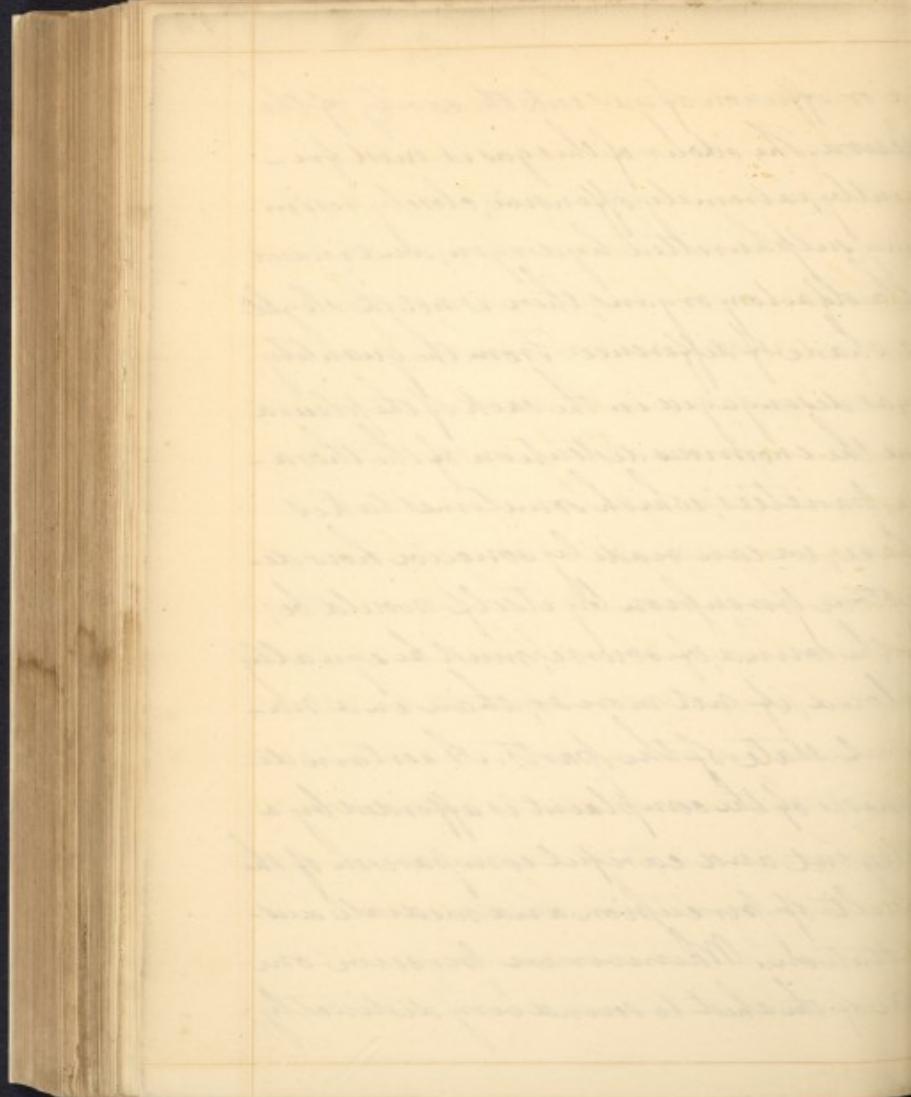


well as my memory serves me, to the attending physician, if a collection of water really existed - Dr Jackson, whose skill with the stethoscope, perception &c is well known, made an examination, pronounced water to be present; - and Dr Gibson performed the operation of paracentesis thoracis, which completely relieved the man for the time, though he died a few months after of another disease of the thorax. If I had never known of any other instance, than Gerr's case of the utility of auscultation &c I should consider it alone as sufficient to recommend the constant use of these means of diagnosis, as well as the serious and attentive study of their phenomena.

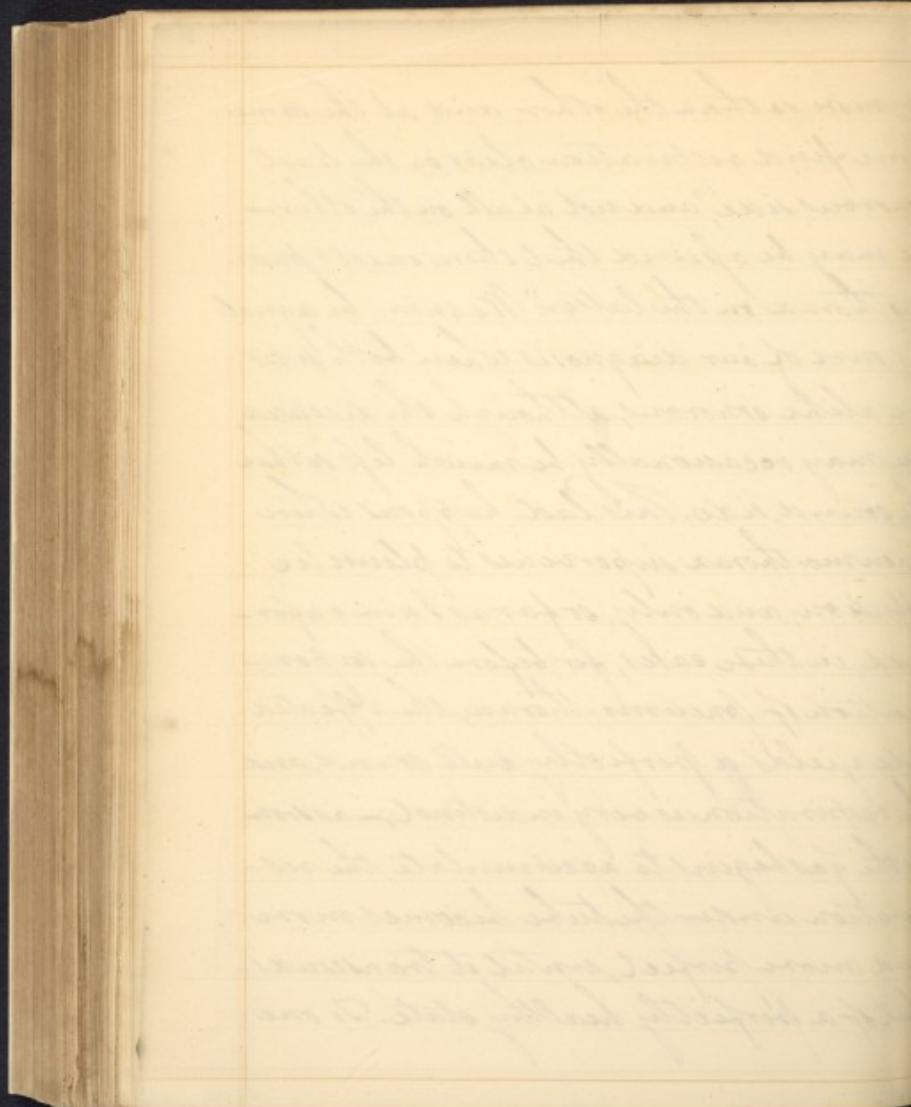
The last disease under the present section which I shall notice, is pneumo-tho-



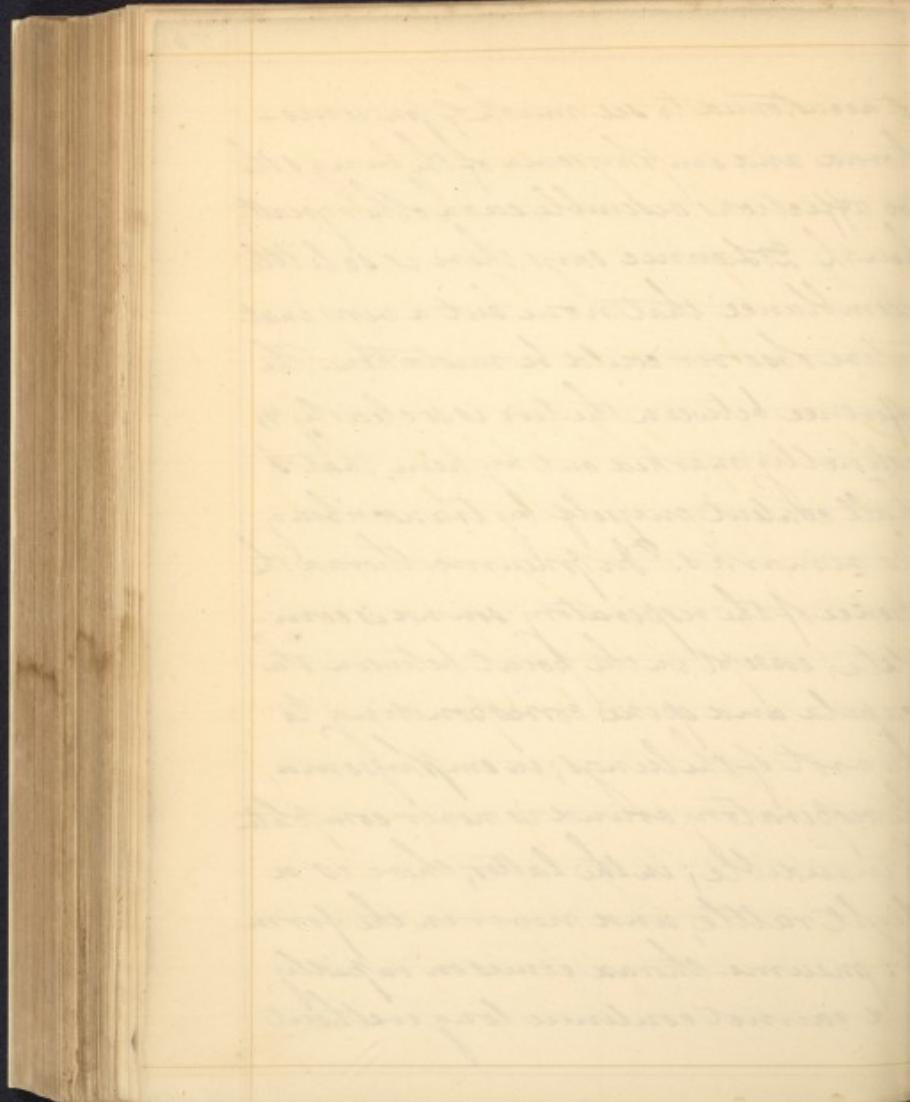
vac or effusion of gas into the cavity of the pleura. The odour of this gas is most frequently, extremely offensive, closely resembling sulphuretted hydrogen, and indeed, to the olfactory organs, there is not the slightest shade of difference. From the quantity of gas disengaged in the sack of the pleura and the enormous distention of the thoracic parieties, which sometimes takes place, we can readily conceive how deceptive percussion by itself would be; for the sound, of course, must be equally as loud, if not more so, than in a natural state of the parts. A certain diagnosis of the complaint is afforded by a diligent and careful comparison of the results of percussion and mediato auscultation. Whenever we percuss one side of the chest to sound very distinctly,



or more so than the other, and at the same time find respiration clear on the least sonorous side, and not at all on the other.— we may be assured that there exists pneumo-thorax on the latter." We may be equally sure of our diagnosis when both sides are alike sonorous, although the disease may occasionally be much less so than the sound side. This last happens when pneumo-thorax supervenes to pleuritic effusion, and only, so far as I am informed, in these cases, for before the super-vention of pneumo-thorax, the affected side yields a perfectly dull sound, and the respiration is very indistinct;—as soon as the gas begins to accumulate, the respiration under the tube becomes more and more perfect, until it transcends that of a perfectly healthy state. To one



not accustomed to see much of pneumo-thorax and emphysema of the lungs, the two affections resemble each other greatly, though Dr. Lenné says there is so little resemblance that none but a very instantane observer could be mistaken. The difference between the two is so clearly & distinctly marked out by him, that I shall content myself by transcribing his remarks. In pneumo-thorax, the absence of the respiratory sound is complete, except in the point between the scapula and spine corresponding to the root of the lungs; in emphysema, the respiratory sound is never completely inaudible; in the latter, there is a slight rattle, and never in the former: pneumo-thorax comes on rapidly and cannot continue long without



giving rise to dangerous symptoms, or even proving fatal; emphysema comes on slowly and is never so severe as to confine the patient to bed, or incapacitate him from his ordinary occupation. I never saw a patient with pneumo-thorax that was not in bed".

While upon phthisis pulmonalis, I spoke of the metallic tinkling as being one of the phenomena of that affection, but it is in the disease now under consideration, we most frequently meet with it. The tinkling of pneumo-thorax may be distinguished from that of phthisis by its being confined in the latter to the circumscribed space of a tuberculous excavation, whilst in the former, it can be heard over a widely extended space, even, in some cases, from the diaphragm to the

the first time I have seen a
large number of them. They
are very small, about 1/2 in.
long, and are found in great
numbers in the sand along the
coast. They are very active
and are found in great numbers
in the sand along the coast.
They are very small, about 1/2 in.
long, and are found in great
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and are found in great numbers
in the sand along the coast.

uppermost boundary of the chest. The metallic tinkling is a very constant attendant of pneumo-thorax, whereas it had never been observed more than four times by Dr Lawrence, in tuberculous excavations, when he published his valuable treatise. It will not be amiss to observe in this place, that the Hippocratic suspicion not unfrequently produces a sensation of fluctuation, when there exists either purulent or serous effusion, which is felt by the patient and is evident to the physician.

3rd Of the Diseases of the Heart. The heart is one of those important organs, without which, we are unable to subsist for a moment, and the diseases of which must necessarily be extremely fatal, when sufficiently violent to produce lesion or ma-

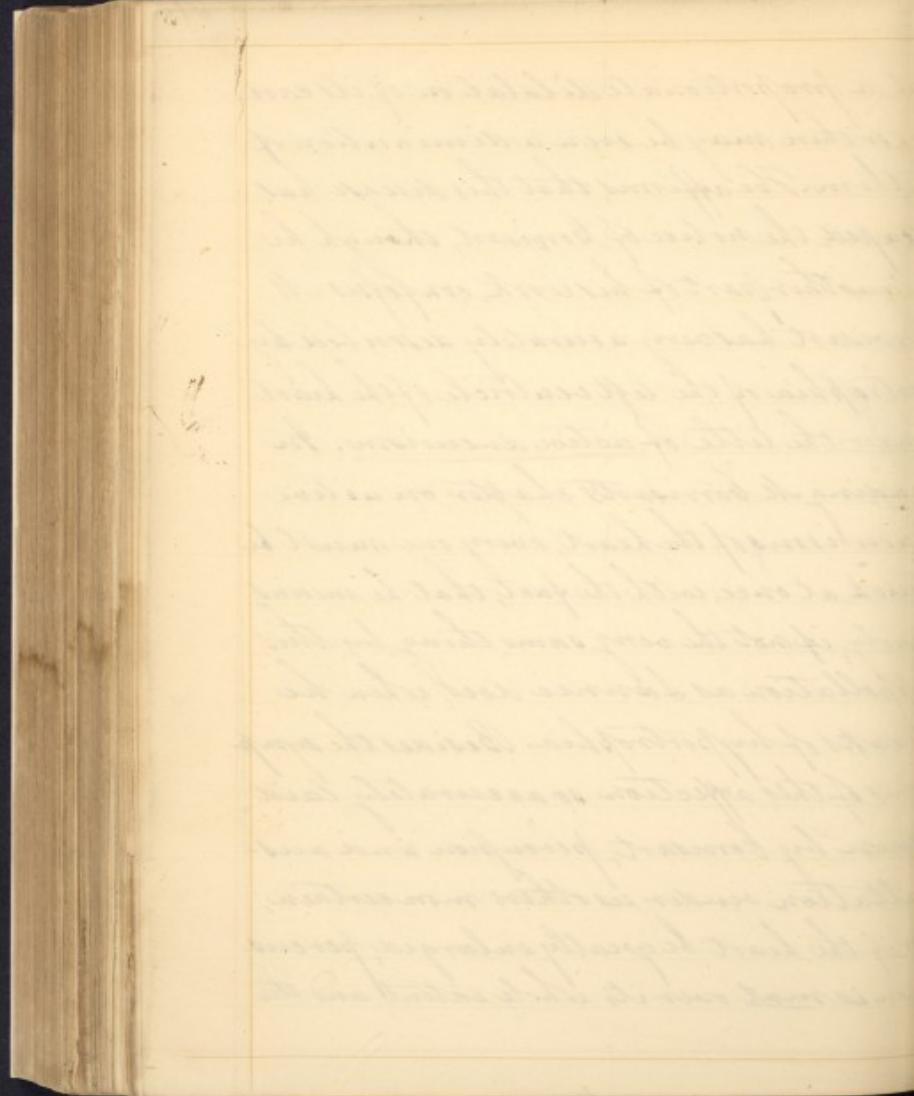
terial alteration of structure. It may be advanced in support of the fatality of these diseases, that we are immediately struck with the mortality of the maladies recorded in A. Corvisart's work on the heart. The heart being the centre of the circulating fluids, and possibly, of vitality also, (if it has a centre,) must continue to be looked upon as one of the primary objects of our care. Though the importance of this viscus has been appreciated by enlightened physiologists, since the time of the great Harvey, yet, its disorders were not correctly understood, until Corvisart, by his patient diligence and sagacious perception, elucidated them by accurate dissections, observations, and deductions. But still much remains to be done; for though perspiration, the pulse, dyspnoea, and the phsy-

diagnosis of the patient, most generally manifested diseased heart; they could not always, or even for the most part, indicate the precise kind of affection, or its location. It was not till after the year 1816, at which period Dr. Launce applied mediate auscultation to many affections of the chest, that the heart's action was correctly understood when in a diseased condition. The extent and irregularity of this important viscera's action, can, at present, be correctly understood by the aid of the stethoscope. I shall now proceed to make a few cursory remarks on some of the most important diseases of the heart, and then conclude.

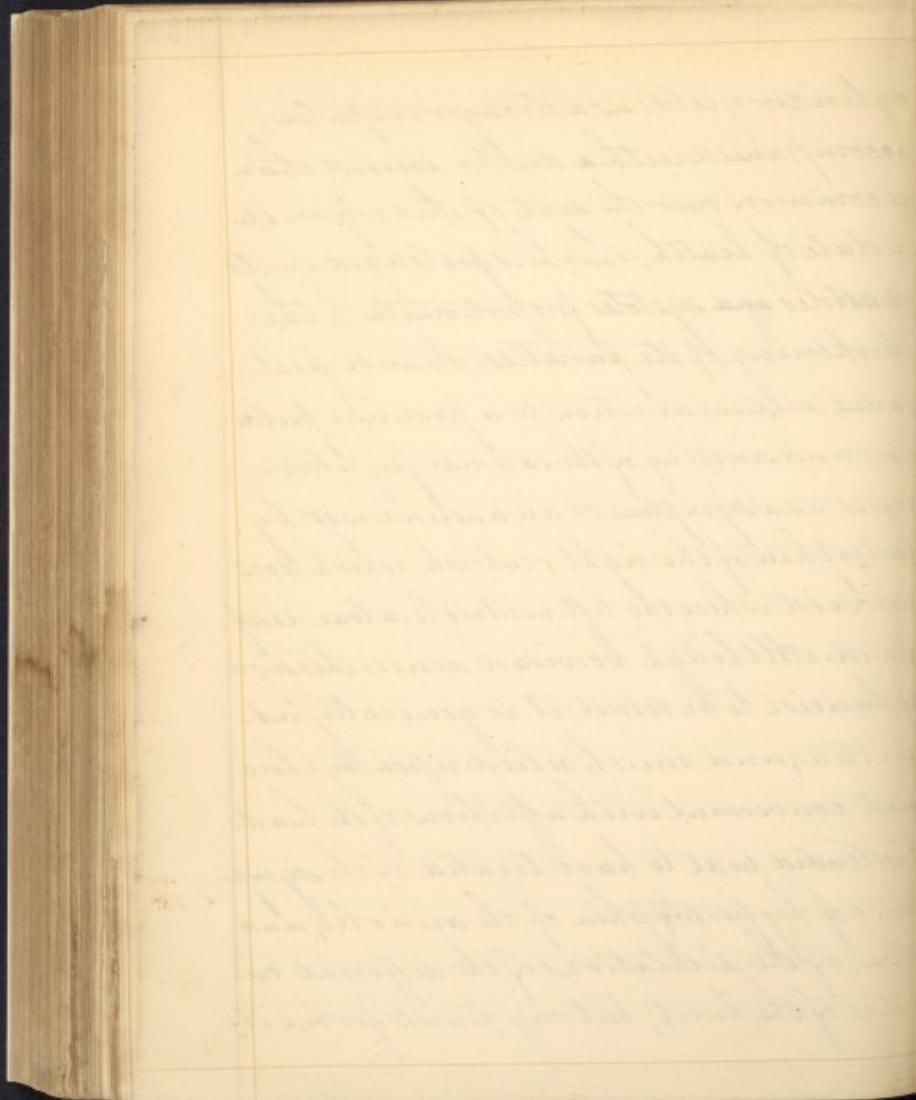
By hypertrophy, according to Dr. Launce, is simply meant, an increase of the muscular substance of the heart, with-

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out a proportionate dilatation of its cavities, or there may be even a diminution of them. He affirms, that this disease has escaped the notice of Corvisart, though he in another part of his work, confesses M. Corvisart has very accurately described hypertrophy of the left ventricle of the heart under the title of active aneurism. In reading M. Corvisart's chapter on active aneurisms of the heart, every one must be struck at once, with the fact, that he means nearly, if not the very same thing by this appellation as Laennec does, when he speaks of hypertrophy. Besides the symptoms of this affection so accurately laid down by Corvisart, percussion and auscultation render us others more certain; so, if the heart be greatly enlarged, percussion is mat over its whole extent and the



cylinder yields us a stronger impulse,
accompanied with a duller sound than
is common over the seat of this organ in
a state of health, which is prolonged in its
diastoles and systoles proportionate to the
thickening of its parieties. Lancisi first
called medical attention to a peculiar pulsa-
tion and swelling of the external jugular
veins as a symptom of an aërial or hypertrophy
of the right ventricle, which does
not exist where the left ventricle alone is af-
fected. Although Bonivard denies this sign
of Lancisi to be correct, it is generally ad-
mitted, and much relied upon by those
most conversant with affections of the heart.
I intended next to have treated of the symp-
toms of hypertrophy of the auricles, and
then, of the dilatations of the different ca-
pacities of the heart, but my limits forbade it.



all I can do on this occasion is to observe, that the symptoms of hypertrophy and simple dilatation are so similar as to cause much confusion in the descriptions of authors, and consequently, great embarrassment to the young practitioner in his examinations—Happily, however, the same plan of treatment is suitable to both of these distressing maladies.

Carditis is one of the most obscure diseases with which the profession is acquainted, for in a review which I have taken of Corvisart and Lanne's productions, I do not find a single case of well marked carditis, though they both describe pericarditis very accurately; indeed, the latter of the above authors confesses, "then, perhaps, does not exist on record a satisfactory case of general inflammation of the heart, either acute

or chronic?" It was with no inconsiderable degree of surprise to me to see such persons as these confessing their never having experienced a genuine case of carditis, for I have on several occasions had the satisfaction of inspecting hearts, which I then conceived to have been violently affected with inflammation. While assisting Dr. Jackson in making post mortem examinations in the Almshouse Infirmary, I have seen, not only the pericardium inflamed, but also, the lining membrane of the heart. This appearance took place most frequently in those who died of hydrothorax or hydrocardia, though I witnessed it, ^{once} in a case of typhoid fever. In all of these cases the patients complained of extreme difficulty in respiration several days previous to death.

In support of the possibility of active inflammation of this organ, Morgagni says ulcers have been found in its substance, and Dr. Launee quotes Olans Borrichius in the following language: "cordis exterior caro, profunde exesta, in laciniis et villos carneos putrescentes abierat." It is not known whether percussion or auscultation would afford any assistance in the diagnosis of such cases; ^{as} the above, the presumption is, that they would not. I shall not notice pericarditis here, in as much as I believe what I have said above concerning carditis to be strictly applicable to this affection.

A few observations on ossification and cartilaginous indurations will be as many as I shall make on a subject so ably wielded by M. Corvisart, his diagnoses being as plain

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as they possibly could be on diseases, like those
present under consideration, without the
aid afforded by mediate auscultation.
There is a symptom almost always atten-
ding opacification of the mitral valve, noticed
and very greatly relied on by the distin-
guished author above cited, which ought
to be very closely attended to when we
suspect a disease of any portion of this
organ - According to him, the principal
sign of this lesion, is, a peculiar rustling
sensation, perceived on the application
of the hand to the region of the heart. "This
sensation I cannot has, I conceive, very in-
appropriately compared to the purring of
a cat when pleased; now I cannot im-
agine how a sensation conveyed to us
through the medium of touch can have
the least resemblance to one conveyed to

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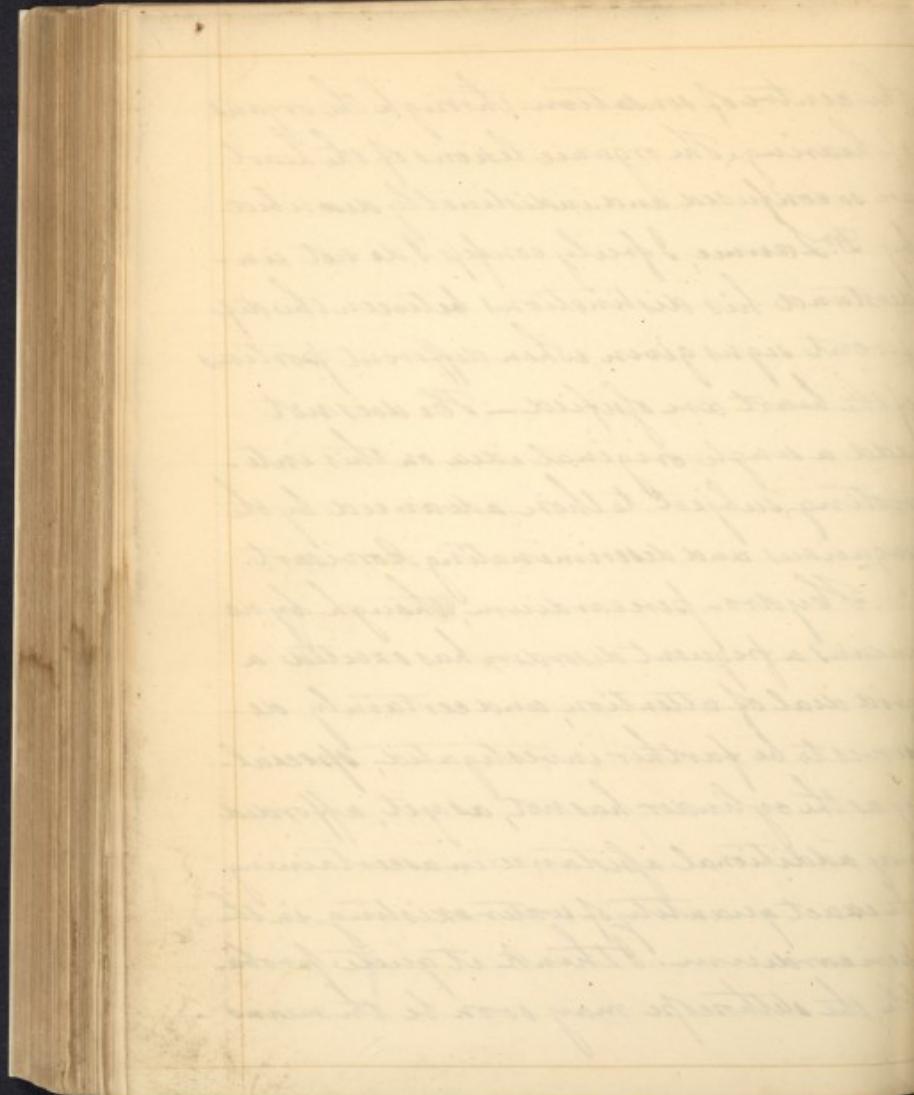
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the centre of sensation through the organs of hearing. The organic lesions of the heart are so confused and indistinctly described by Dr. Laennec, I freely confess I do not understand his distinctions between the different signs given, when different portions of the heart are affected — He does not add a single original idea on this interesting subject to those advanced by the sagacious and discriminating Corvisart.

Hydro-pericardium, though by no means a frequent disorder, has excited a good deal of attention, and certainly deserves to be farther investigated, specially as the cylinder has not, as yet, afforded any additional assistance in ascertaining the exact quantity of water existing in the pericardium. I think it quite probable, the stethoscope may soon be the means



of throwing a light around this subject, involved in much obscurity, though its eminent discoverer has not derived any assistance from its use in hydro-pericardium.

From what has been advanced on the diseases of the heart, it will readily be perceived, the cylinder fails as a diagnostic means in some of its most interesting diseases; notwithstanding this, every impartial person must acknowledge its utility in some of them, and the possibility of its rendering the most obscure diseases, more intelligible than they have hitherto been.

